Jacob Walsburg

THE SOUTHERN AGRICULTURIST,

HORTICULTURIST,

AND

REGISTER OF RURAL AFFAIRS,

ADAPTED TO THE

Southern Section of the United States.

NEW SERIES.

VOL. 2—NO. I.

JANUARY, 1842.

EDITED BY J. D. LEGARE.

MONTHLY.

CHARLESTON, S. C.
PUBLISHED BY A. E. MILLER,
95 BROAD-STREET.

Five Dollars a Year,
IN ADVANCE.

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THE SOUTHERN AGRICULTURIST.

(NEW SERIES.)

Vol. II. FOR JANUARY, 1842. No. 1.

X Per S727A5 N.S. v.2

For the Southern Agriculturist.

REPORT OF THE COMMITTEE ON SEA-ISLAND COTTON.

Agricultural Society of St. John's, Colleton, July 12th, 1841.

Resolved, That Whitemarsh B. Seabrook, William G. Baynard, William Seabrook, J. Jenkins Mikell, and E. Mikell Seabrook, be a Committee to prepare an essay on Sea Island Cotton, with a view to be submitted to the State Agricultural Society, at its next meeting. J. JENKINS MIKELL, *Secretary*.

(Extract from the Minutes.)

September 13th, 1841.

On motion, it was *Resolved*, That the Report of the Committee on Sea Island Cotton be presented by the Chairman to the State Agricultural Society of South-Carolina. J. JENKINS MIKELL, *Secretary*.

(Read before the State Agricultural Society of South-Carolina, November 24th, 1841. Ordered to be published in the *Southern Agriculturist*.)

THE long-staple, or black-seed Cotton,* is cultivated in South-Carolina to the distance of about thirty miles from the ocean. Of the raw material, there are three distinct qualities designated in the markets, as Sea-Islands, Mains, and Santees. The first, a pound of the finest of which, manufactured into the finest lace, is now worth from 8 to 15 guineas, and has been sold as high as 100 guineas,† is the

* In 1786, this Cotton, supposed to be a native of Persia, was introduced into Georgia from the Bahama Islands, (where it had been brought from Anguilla in the West Indies) by some of the American royalists refugees, who had settled in the Bahamas at the close of the revolutionary war.—*Baines on Cotton manufacture, &c. &c.*

† Mc Culloch's Commercial Dictionary, Article Lace. vol. ii., p. 125.

The famous Dacca muslin of India, denominated in hyperbolical language "webs of woven wind," though composed of such cobweb-like filaments, that, according to the authority of the Rev. Wm. Ward, a missionary at Serampore, "when laid on the grass and the dew has fallen upon it, is no longer discernible," is manufactured from Cotton, not as fine as many brands now exported from South Carolina. A pound of Dacca Cotton has yielded a thread extending only to 115 miles, 2 furlongs, and 60 yards, whilst yarn from several of our plantations is now spun in England, making 350 hanks to the lb. weight, each hank measuring 840 yards, and the whole forming a thread of 167 miles in length. Since then, as an experiment, 450 hanks have been produced from a pound of Cotton. These furnished a thread of about 214 miles long. The extreme of fineness, says Mr. Baines,§ to which yarns for muslins are ever spun in England, is 250 hanks to the lb., which would form a thread measuring 119½ miles; but it is very rarely that finer yarn is used than 220 hanks to the lb., which is less fine than the specimen of Dacca muslin above mentioned.—*Baines*.

§ This valuable history of the Cotton manufacture in Great Britain, it must be borne in mind, appeared in 1835.

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most valuable grown in any part of the world for exportation. Of descriptions of the plant reared on the sea-shore, the number is probably much greater than any examinations have yet disclosed. At present we are acquainted with only ten or fifteen varieties. These are distinguishable by certain criteria well known to the observant cultivator, but frequently the eye, unguided by the lights of botany, is unable to detect a difference, until the harvest itself shows the existence of perhaps a very material one. Invariably fecundity in the plant is counterbalanced by defectiveness in the quality of the fruit; on the contrary, the better the fibre, the smaller is the harvest. This is in conformity with the wisdom of nature as displayed in all her works. From analogical reasoning alone it may indeed be inferred, that our continued efforts to discover a plant combining productiveness with superiority of staple, in as high a degree as these properties are separately found in many species of cotton, are utterly hopeless.

From the time when long-cotton was first introduced into this State, to within a recent date, its cultivation was decidedly profitable. Now legal interest on the capital of the grower is rarely ever realized. From 1821 to 1830, inclusive, the aggregate crop was lbs. 107,294,930. In the ten succeeding years it was only lbs. 79,041,596, being a deficit of lbs. 28,253,334. The average annual product from 1805 to 1817, a period of nine years, excluding the four years of the embargo and war, was greater by lbs. 797,033, than it has been for the last nine years, or since 1832. Although the number of acres at this time in tilth cannot with accuracy be stated, yet, it is believed, that it is at least one-third greater than it was in 1820, or twice that of 1804. Under the operation therefore of decreased and decreasing exports, with a vast augmented population in every part of the world—extraordinary improvements in machinery—greater skill and cheapness in spinning* and weaving—lower

*Statement of the production and cost of three different species of Cotton yarn, in England, in 1812 and 1830:

Description of yarn.	Price of Cotton and waste per lb.		Labour per lb.		Cost per lb.	
No.	1812.	1830.	1812.	1830.	1812.	1830.
	s. d	*s. d.*	*s. d.*	*s. d.*	*s. d.*	*s. d.*
150	2. 10.	1. 8.	6. 6.	4. 11.	9. 4.	6. 7.
200	3. 4.	3. 0.	16. 8.	11. 6.	20. 0.	14. 6.
250	4. 0.	3. 8.	31. 0.	24. 6.	35. 0.	28. 2.

The cost of No. 40, per lb., is 1*s.* 2½*d.*
" of No. 60, " is 1*s.* 10½*d.*
" of No. 80, " is 2*s.* 6¾*d.*

duties on the importation, and the superior properties of the kinds at present raised, the value of long-staple cotton is less now than it was 35 years ago. It may then be emphatically asked, is the planter fairly compensated for his toil and skill? Is it possible that the labor of converting a pound of cotton, for which 70 or 100 cents may have been paid, is from $70 to near $500, the market worth of certain articles fabricated from it? Apart from these interesting considerations, which are worthy of an early and attentive investigation, let us inquire, why, at certain periods, embracing many years, was production materially lessened? and why of late, does it appear to be steadily diminishing?* Satisfactory replies to these interrogatories will be found: first, in the operation of certain measures of the Federal Government; secondly and principally, in the yearly withdrawal from our lands of a large portion of their productive powers, without returning an equivalent in the form of manures, or other meliorating expedients; and thirdly, in the indiscriminate raising of the finer descriptions of cotton in disregard of the capacities of the soil.

To show the disastrous effect of the prohibitory system, a reference to the table of exports is alone necessary. From 1827 to 1833, inclusive, when the tariff policy was in the ascendant, the average price of long-cotton was less by about five pence, than at any former or succeeding corresponding period.† In 1825, the sales averaged 28½d. In 1830, '31 and '32, the era of the greatest political suffering, the price fell to about 14½d, notwithstanding the unexampled short crops of those years. Although the price since

*This in part is owing to a diminished demand from the recent practice of mixing long and short Cottons in the fabrication of certain commodities, and because another manufacture has taken the place of lace in the higher circles. "Lace," says Mr. Baines, "having become a common ornament, easily accessible to all classes, has lost its attractions in the fashionable circles, by which it was formerly patronised, as that very rich lace is no longer in demand. And many articles of dress, which in our drawing rooms and ball-rooms, lately consisted of the most costly and tasteful patterns in lace, are now either superseded, or made of a different manufacture"

The average weekly consumption of Sea-island Cotton in Great Britain, was

In 1820	409 bags
1825	360
1830	460
1834	498
1835	354
1836	379
1837	310
1838	317

†See Note G. at the end of this article.

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the compromise has been comparatively high, yet it is by no means as large as the facts just presented would seem to warrant. The tariff laws, operating most ruinously upon individual interests, drove many of our most enterprising agriculturists from the State. They abandoned their plantations in search elsewhere of lands, that would compensate them in quantity for what at home they lost in the estimated value of their crops. This in part accounts for the large amount of landed capital in some of the Parishes at present unemployed. These plantations, constituting together an extensive section of country, from our better knowledge of renovating soils, might, by a very moderate outlay, be again rendered sources of prosperity and wealth.

In relation to the third cause directly affecting our interests, which, though not in order, shall first be considered, it may safely be asserted that scarcely any event could have inflicted a severer blow on the agricultural community of the sea-board. For many years Mr. Kinsey Burden, of John's Island, received for his crop over $1 per lb., whilst his co-laborers were unable to obtain the one-half of that sum. The collisions of mind, however, soon elicited the important secret, and as soon as it was known that the value of Mr. Burden's cotton was traceable to the seed, the task of rivalling his fame as the grower of the finest vegetable wool in the world was not a difficult one. In a short time several of the Islanders exceeded the Colleton planter in price. The excitement soon became strong and general. Then commenced the epoch of secret prices—a disingenuous device on the part of purchasers to keep down the amount of their outlays at the expense of the planter's just profits. Whilst the latter was made to belief, that it was his interest to conceal from his neighbors his market transactions, it frequently happened, as might have been expected, that his cotton was sold below its real value, and that his competitors received more for their crops than he did for his own. When reflection shall regain its empire among the members of our profession, this unnatural alliance between buyers and individual sellers, so palpably prejudicial to the latter, will be dissolved, never again, it is hoped, to be revived. If the question be asked, whether, as a class, we have been benefited by the advance in price, consequent on the production of a superior staple, the answer must be in the negative. There is probably not one planter in twenty who

has not sustained a heavy pecuniary loss by having so long unwittingly obeyed the mandates of an insidious guide. From the very year (1829,) when the culture of fine seed roused him into unwonted activity, is to be dated the remarkable diminution in the profits of his labor. Still blind to the true cause of his downward course, he traces his misfortunes to the operations of those natural agents, whose unpropitious influence now-a-days he persuades himself is more than ordinarily active. With unusual pertinacity he clings to the frail hope, that at least the growing crop will exhibit an amply remunerating return. There are evidences, nevertheless, that the illusion on this subject is about to be dissipated, and that the popular but mischievous notion, that the seller of cotton at 80 cents is necessarily in the receipt of more money than he who disposes of his crop at a rate fifty per cent. lower, cannot much longer be entertained. The inquiries of the cultivator now very properly relate to the profitableness of cotton, or what is substantially the same thing, to the kinds best suited to his grounds. In this matter he must rely mainly upon himself. If his judgment and industry be aided by the lights of experience, the goal of success it will not be difficult for him to reach. A few planters, it is admitted, by raising superior cottons, have been engaged in a highly lucrative business. It must also be conceded, that the example of their prosperity has resulted in the serious injury of a large body of their fellow laborers. If all owned lands similar to those whose brands are so favorably known abroad, the policy of the latter should perseveringly be followed. Some of the Islands of the sea-board in this State seem to be the very home of the silky fibre. Far exceeding in every essential respect any of the varieties of which the other States can boast, it enters the markets of Europe without a rival; further, the finest descriptions of cotton are alone set apart for an exclusive purpose; all other kinds are mixed together by the spinner,—the inferior qualities of the long-staple being used for the twist or warp, and the short-staple for the weft. Let it be remembered also, that the finer the cotton, the higher relatively is its actual worth. The price of the raw material determines the value of the coarser fabrics, but little labor being required for their production, whilst the price of the raw material necessary to the production of the finer fabrics is only a secondary consideration, as the labor neces-

sary to their completion forms the principal ingredient of cost. These reasons induce the belief, that our location for rearing this precious commodity is not justly appreciated. The present obstacle to be surmounted by the grower lies in his imperfect conceptions of the capacity of his soils, and of the mode best calculated to renovate them. Wherever unadapted to his object, no reward for his industry, ever likely to be bestowed, will compensate him for the meagerness of the harvest. It is now obvious, that each variety of soil is better suited than another to only one of the varieties of our favorite crop. To discover their adaptation to each other is a plain dictate of self-interest. Superfine and the better qualities of fine cottons cannot be raised without loss, except on the sea-islands. On a strip of the main-land, immediately contiguous to the coast, the inferior kinds might be made to yield a fair per centage. As you recede from the ocean* the necessity of cultivating the coarser descriptions is strikingly apparent. For the first, with experience as our guide, *high ground, developing a soil rich, close, and of a yellow hue*, is absolutely essential. Every section of the plantation therefore, no matter how small, with these evidences of fitness for the silky fibre, should be seduously devoted to its culture. The product is needed by the fashionable world, and as the quantity is limited by the combination of circumstances necessary for its production, a large nett income, in despite of the want of fecundity in the plant, and a ready sale, will be the certain results to the persevering cultivator. On the contrary, if he persist in raising the best cottons on every description of land, repeated failures, and occasionally total losses may be predicted with unerring certainty.

Until lately, the sea-island crop has been confined exclusively to high grounds, as contradistinguished from the marshes. The sagacity and perseverance of two members† of the Agricultural Society of St. John's, Colleton, have been instrumental in effecting a change on this head, the ultimate consequences of which it is not easy to predict.

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* The Pernambuco Cotton, which is only second to the Sea-island in value, though still much inferior, is said by Koster to be injured by proximity to the sea, and improved as the planter recedes from the sea. In Egypt also, the Cotton of the Upper Provinces, several hundred miles from the sea, is superior to that of the Delta.—*St. John's Travels*, vol. ii., p. 438.

† William G. Baynard and E. Mikell Seabrook.

There is no soil in South-Carolina, if sown in long-cotton, that will yield more money in a series of years, than those immense tracts which lie about the points where the salt and fresh waters meet. Nearer to the ocean, the land is low, intersected by numerous small creeks, and too salt for immediate use. Above the line, the total absence of saline ingredients renders the ground fitter for grain, especially rice, than cotton. Of the kind just noticed, there are thousands of acres in the Parishes washed by the Atlantic, which to their owners are now barren wastes. This is the great prairie region of the lower country, capable of itself, from its inexhaustible fertility of producing as much fine cotton as the demands of trade will probably require for a quarter of a century. As these marshes are very level, numerous ditches are required. If this work be faithfully done, such is the richness of the soil, that, whether grown on beds or not, the crop, even the first year, will abundantly repay the labors of the cultivator.

It might here be appropriately remarked, that the universal opinion seems to be, that low and flat lands are in general unadapted to the producing of fine cotton. Is there any substantial foundation for this belief? Taking the analysis* of the soils of this Island by Professor Shepard as our guide, in what consists the difference between the high and low grounds? Both are sandy—both deficient in nearly the same proportions in organic matter, and the pow-

*

When Dried	Water of Absorption.	Organic matter.	Increase in weight after being thoroughly drenched in water.	Rates of drying from a condition of saturation.	Silica.	Alumina.	Water of absorption and organic matter.	Per oxide of iron with car of lime and phosphate of lime.	Carbonate of lime	Phosphate of lime	Per oxide of iron	Oxide of iron and phos. of lime
A	lost											
B												
C	2,37	2,66	321.	14.0 of water.	92,57	1.70	5 03	0 70				
D	2,83	3,83	342.		91,64	1 70	6.16	0.50				
E	2,66	1,90	305.		94.00	0.94	4.56	0.50				
F	1,66	1,75	293.	11.0	95.00	0.79	3 41	0.80				
G	2,83	2,16	325.		93.00	0 81	4.99	1.20				
H	2,36	2,41	315.	12.0	93.23	1.05	4.77		0.35			0.60
I	11,36	8,33	480.	28.7								
K	.14	9.66	605.	39.0	61.75	9.00	23.66		0.29	20	5.80	
Pure sand.			235.	6.8								

er of absorption in each is about the same. Where the soil is of good depth and the substratum clay, facts easily ascertained, the mere elevation of the land is probably a matter of inferior moment. The existing error on this subject is believed to be the want of a sufficient number of drains to carry off the superfluous water. Cotton in all its varieties requires a dry soil. A deep-rooted plant, its capacity to withstand the effects of drought is very great. Wherever there is excess of wetness at the roots, the blight, a fatal disease to the crop, is certain to be produced. If too much moisture can be prevented by labor, it would be difficult to assign a valid reason for the exclusive course so long pursued. Until recently low black grounds were supposed to be utterly unfit for peas. Now, by manure and the keeping of the earth dry, they constitute the means of adding largely to our stock of provisions.

It is not proposed to give a detailed statement of the most approved mode of cultivating the Sea-island Cotton. Information on this head has been abundantly furnished through our Agricultural journals. Before proceeding, however, to weightier matters, it is deemed important to notice a few errors in management which ought to be promptly remedied. We hold then, that Cotton lands should be listed immediately after harvest, and not postponed to a later period; secondly, that too little seed is sown; thirdly, that the thinnings of the crop are too rapid or sudden; fourthly, that due attention is not paid to draining—nor, fifthly, to the selection of seed for planting.

1. Food for plants can only be received in a soluble or gaseous form. In animal or vegetable matter there is no nutriment, until it is reduced to a condition fit to be absorbed by the minute vessels of which the cellular substances of the roots and leaves of plants are composed. To effect this, air, heat, and moisture, are indispensable. When the sward is drawn together in the fall, the rains and frosts of winter prepare it for that process through which it passes when the warmth of spring exerts its power. Then decomposition fairly begins, and is continued during the period of the growth of the plant. On the other hand, whenever listings are put off, as is the usual practice until February, the tender roots of the Cotton become encased in a body of dry inert vegetable matter. The plants not only do not benefit by the manures which lie beneath the sward, but

their tap-roots are obstructed at the very time when they should be assisted in their descent. If, therefore, the colour of Cotton in its infancy be yellow or otherwise unhealthy, the want of food, for the reason already assigned, will be found to be the true cause. Hence too the absence of bottom fruit, and one prominent source of new growth. It is for this reason, the non-conversion of vegetable matter into geine or humus,* which has long been supposed to constitute the pabulum† of plants, that new ground does not produce a good crop of Cotton the first season. It will yield corn, because the surface becomes aliment by its contact with the air. If, however, the width of a foot in an extended line be well broken up, so as freely to admit the access of air, in order to bring about fermentation, new land will give nearly as large a return in cotton the first year as the second. Where decomposition begins late in the season, from the heat which then prevails, it is likely to be too rapid, and, as from this cause there will be excess of stimulus, the injury to the Cotton plant will be nearly in proportion to that excess. In this state, whilst drought checks, and, if it continue long, entirely arrests the nutritive agents, a few heavy showers of rain again put them in such active and powerful motion, that the appearance of new shoots and fibres, the then evidences of a second growth, is followed, according to the laws of vegetable physiology, by the loss of all the embryo fruit. But, admitting that the listings take place at the proper time, if the manures be placed, as is now practiced, in a narrow line directly below the tap-root, the same consequences, though in a modified and less injurious form, will inevitably follow. Let them, therefore, be broad-casted, for in that way only can the hazards of the old system be avoided.

2. Before the introduction of fine Cottons, it was usual to sow about one bushel of seed per acre. Now so great is the desire for fame in the markets, that, from the toilsome task of selecting seeds, which must be personally done, the grower seldom uses more than a peck to the acre, and not unfrequently one quart. The result is, that his plants, of a

* "The dark substance which remains when manure is thoroughly rotted, and which colours the soil black." "It is a substance formed by the decay of plants, and very rich in carbon."—*Professor Lindley.*

† Liebig contends, that "humus in the form in which it exists in the soil, does not yield the smallest nourishment to plants;" he regards it only as a source of carbonic acid.

peculiarly delicate constitution and unprotected by art, are unable to resist the rude assaults of easterly winds in the spring. Where they come up thickly, they serve as mutual props to each other, and it is seldom that the injury from external causes is so great that all of them become affected. By the shade too which their leaves conjointly afford, their growth is advanced, and by so much is the progress of the plant in its sphere of operations hastened. The protection of Cotton from wind, especially at the beginning of the season, is a matter of such importance, that every planter who understands his duty has a thicket of shrubs and small trees around his fields. Of late it has been found of essential advantage to plant corn between cotton, on every fourth, fifth, or seventh row, according to the fertility of the soil. This is done as soon as the ground is bedded. The corn in its comparatively advanced state, not only serves as a shield to the diminutive plants in its vicinity, but without, it is believed, detracting from the value of the Cotton crop, except where the land is weak, its product is decidedly greater than single rows usually furnish in a regular field of that grain.

3. That bottom fruit cannot be produced unless the crop is thinned in due season, is obvious; but that to pull up a large proportion of the plants very early is the proper plan, the experienced grower knows to be untrue. It is undeniable that, under ordinary circumstances, Cotton will not show its procreative powers until it has attained a certain growth or age. Plants on rich land will begin to "form" before those on poor land, but neither the former nor the latter will disclose the rudiments of fruit until they have put on their coat of bark—the work mainly of time, of abundance of aliment, or of both. If there were no disturbing causes, one plant to the "hill," at the beginning of the thinning season, would be in exact accordance with the wish of the grower, for there is no doubt that, when unchecked, its isolated position from infancy establishes a strength of constitution favorable to early vigor and maturity. But as the elements frequently wage war against his crop, his business is to act on the defensive.

In the opinion of our most experienced cultivators, the first hoeing,* which should be completed in April, ought to

* "By loosening the soil which surrounds young plants, the access of air and the formation of carbonic acid are formed; and on the other hand, the quantity of their food is diminished by every difficulty which opposes the renewal of air."—*Liebig.*

be deep and directed chiefly to the process of pulverization. At the second operation, one half of the plants, (where the ground is poor, from three pecks to one bushel of seed to the acre having been sown,) if healthy, should be taken out, and one half or more of the remainder, the next time the field is worked. Afterwards, if the weather, the natural or artificial strength of the soil, the growth of the crop and other auspicious indications, justify it, two or only one plant to the hill should be left. On this head two general rules ought to be strictly observed:—1. Never to thin in windy or chilly weather, and, 2, not to separate the plants so far at any one time as to expose them before the bark is on to the direct action of the sun's rays—in other words, check not the growth, which will be the case if these precautions be not noticed.

4. On the Sea-islands draining can scarcely be called a regular Agricultural operation. Viewed as a business of secondary moment, the ditches are not only injudiciously constructed, but it is seldom that their number is at all commensurate with the object to be accomplished. It rarely occurs to the planter, that his manures are completely neutralized, if not rendered absolutely worthless, as long as the soil is constituted the receptacle of noxious properties engendered by excess of moisture. The lowest lands, which by nature are usually the richest portions of the plantation, from the want of a little time abstracted from that which is now in part unprofitably expended in other supposed modes of improvement, are rendered cold, sour, and unproductive. Thus, by sheer neglect, not only it may be a large section of our landed capital is made valueless, but the continued wetness of the earth during the heats of summer by infecting the atmosphere, is thereby converted into an instrument of wide spread evil. As long as there is no water on the ground visible to the eye, the field is pronounced well drained. This, however, is too often a serious mistake. Our sandy soils drink up rain nearly as fast as it falls. The surface of the earth, therefore, becoming quickly dry, it does not follow that no injury to the growing crop is sustained. Wherever the substratum is clay or a compact sand, the water, as soon as it reaches this impervious bottom, ceases its downward course, and if, from the absence of outlets, it cannot flow, the baneful effects of stagnation will be the result. For this reason the highest lands, if

level, should have the means of carrying off its superfluous wetness. The obvious rule for the government of the planter would seem to be so to regulate the size, shape, and number of his ditches, that, whilst they cannot fill up by the adjacent earth being washed into them, the water might rapidly descend and fall below the roots of his plants. In the prosecution of this work, and to prevent washings and waste, the Cotton ridges ought to be perpendicular to the declivities of the land, and all the excavated earth of the drains should be removed, and transferred to the sunken spots of the field. In flat or low grounds, one ditch* every fifty feet will be found necessary to insure success.

5. Inattention to the selection of seed for planting. This is a much neglected subject—one, indeed, to which the planter's notice appears to have been purposely withheld. So intent has he been of late to the notion of sending to market the softest and most highly rated Cotton, that, whether, in the effectuation of that end, he does not subtract very materially from the product of his crop, is to him a novel question. The growers of the finest descriptions of the long staple do not sun their Cotton. The usual practice is to spread it as thinly as possible in houses, or under sheds, erected for that purpose. That this is an injudicious scheme is obvious from the fact, that, where Cotton is even but slightly packed, as in general is the case, the bottom layer is almost invariably deficient in strength—that not unfrequently it is found in a mouldy condition, and sometimes completely rotten. On no plantation is there space enough to dry Cotton in the shade, but if there was, the power of the sun would still be necessary. That alone can extract the water which the pickings for the first two or three weeks contain. In damp weather, at the beginning of the gathering season, two hours exposure will show a loss from evaporation of about 20 per cent. The four valuable properties of long Cotton in their relative order, are strength, length, fineness, and evenness, of thread. Whilst the three last cannot be impaired by solar action, unless carried to an immoderate extent, which, by depriving it of its oleaginous property, would render it white and brittle, the first is obviously affected by dampness. Undried Cotton is liable to be

* The most expeditious and economical mode of making drains is by means of the plough. A good mule will accomplish more work of this sort in a day than half a dozen men with only spades and shovels.

discoloured from the oil of the seeds when in a heated state—is difficult to gin and to clean, and is easily made stringy and lumpy; but above all, it produces defective seed. Our selections are annually made solely for fine Cottons. We then adopt one of the most effective means ingenuity can suggest to make them unproductive. Reason would seem to dictate that the best seeds are those from full-blown pods on healthy stalks, and experiments prove that, for that purpose, the middle bolls should be gathered. Particular negroes ought to be set apart, about the time they begin to ripen, for the selection of seed, and, if the rule here recommended be faithfully followed, and the Cotton be subsequently judiciously sunned, and put away in a dry and airy house, it is confidently believed, that the benefit to the future crop will be of the most decided character.

Among the many expedients for improving, enriching, or correcting a soil, known to agriculturists, three only have been adopted to any extent by the low-country cultivators: 1, the admixture of earth to improve the texture of the soil; 2, and 3, manuring with substances not excrementitious, and those which are excrementitious. Before adverting particularly to these, it is proposed to offer a few brief observations on enclosing and rotation of crops, two modes of renovation, long elsewhere in use, and more than any others generally resorted to. Why the former has been so entirely neglected by the planters, two reasons only can be assigned—the want of timber and the immoderate size of their stocks. For the first, embankments with live fences would constitute a valuable and permanent exchange. That the latter could be advantageously reduced, perhaps to the extent of one-half, the admonitions of yearly experience most pointedly show. Better meats for the table, more of the comforts of the dairy, richer manure, and infinitely less consumption of vegetable substances, of the ordinary supply of which most of our lands are deficient, are some of the benefits which reason and analogy satisfy us would flow from the adoption of this suggestion. We cannot hope to restore to the soil the nutriment of which cultivation deprives it, if, in lieu of rest, the depredations of the tooth are to succeed the operations of the hoe. Enclosing is held to be the cheapest and the most effectual auxiliary to the labours of the husbandman which necessity has yet created. In all highly cultivated countries it is a

prominent resource of the farmer. By the simple process of shutting in a part of his grounds with the means his locality enables him to provide, nature is wisely left alone to do her work of munificence and regeneration. Around Naples, famed for its fruitful grain lands, corn has been raised for centuries without the application of manures. A field is cultivated once every three years, and is in the interval allowed to serve as a sparing pasture for cattle. The secret of renovation, says Liebig, in his admirable treatise on Organic Chemistry of Agriculture, appears to lie in the setting free or rendering soluble a fresh portion of the alkalies contained in the soil—or, as he elsewhere expresses it, "to the destruction or conversion into humus of the excrements contained in it, which is effected during the fallow season, at the same time that the land is exposed to a further disintegration."

The objection has been advanced, that enclosing increases the lightness and friability of land. If this be true, an effect the very reverse might be produced by levelling. Indeed, to level the ground and list it early in the fall, are parts of the plan which is now the subject of comment. Where either is neglected, especially the latter, the consequences in certain contingencies will be detrimental instead of beneficial. On our very light lands the levelling system renders them necessarily more compact, from which three decided advantages are derived; 1, the soil becomes less liable "to blow"; 2, less manure is lost by evaporation—and, 3, more vegetable matter is produced. Of two adjoining acres let one immediately after harvest be levelled, and the other not. In the spring, whilst the first will exhibit a good coating of crop grass, the quantity on the second will be strikingly deficient.

The high grounds of the Sea-islands are set apart exclusively for cotton—only so much of flat land being used for that purpose, as the exigency of the grower absolutely requires. Hence every second year the same field is made to produce the same crop. It is admitted, that a very material change in this practice cannot be effected, but are there not portions of all of the plantations invariably assigned to provisions, which, by the aid of the spade, could be converted into highly productive cotton fields? If so, then precisely to that extent could the scheme of interchanging crops be satisfactorily adopted. Suppose a plan-

tation to consist of 500 acres, of which 125 acres are cultivated every alternate year in cotton, and a like number in provisions. If, of the latter, 25 acres by ditching and suitable manures could be made subservient to our main purpose, then that quantity need not be sown in cotton but once in four years. In this manner one-sixth* of the cotton grounds would experience the most essential benefits flowing from the alternation practice of husbandry. Potatoes return a large amount of vegetable matter to the soil. Where this valuable but much neglected crop, is succeeded by entire rest to the land, which on the third year is grown in cotton, there exists the very best mode of improvement in a limited way, without manure, known to the planter of the sea-coast. Peas, if put in the ground in the *spring*, and only so well attended as to insure a full supply of seed, is another decidedly meliorating process, where a subsequent growth of cotton is looked to. Indian corn is an exhauster of the soil—so are oats and rye; but if the land which yields a crop of either be permitted to lie fallow, and then put in cotton, the harvest will be considerably greater than if the previous crop had been in cotton. This is universally true where deep-rooted plants are followed by those whose roots are only horizontal and near the surface.

The theory of rotation, or the one most entitled to confidence, is that of Decandolle:—that plants excrete from their roots certain substances which are innutritious or hurtful to the same kind of plant in succession, but which may be assimilated by other plants, which would thus remove them, and render them again fertile for the first. Plants like the earth in which they grow are composed of few essential elements. The various combinations of these elements make up the varieties of the vegetable kingdom. All vegetables must return to the soil different proportions of certain substances, which are capable of being used as food by a succeeding generation, and experience testifies that, in despite of an abundant supply of the most powerful kinds of manure, the produce of many plants diminishes, when they are cultivated on the same field for several consecutive years. Again, several plants thrive best when growing beside one another; and on the contrary, others mutually prevent each other's developement. Whence it

* A portion, though not the same part of the cotton field, (150 acres,) amounting to 25 acres, would be always at rest or in provisions.

is concluded, that the beneficial influence in the former case depends on a mutual interchange of nutriment between the plants, and the injurious one in the latter on a poisonous action of the excrements of each on the other respectively.* These considerations are probably unimportant to our inquiry, for with the fact itself we would deal—that in any number of continuous years the same field without manure cannot be profitably cultivated in one crop, whilst by an interchange of crops each would yield an adequate return. From this apparent law of nature one of two inferences is plainly deducible:—1st, that every plant selects only such substances as are capable of its assimilation, or, 2dly, that it subsists indifferently upon matter, returning to the soil in the form of excrements what is unsuited to the purposes of nutrition.

It is not pretended that the rotation plan, even if it could be systematically adopted, would tend to the restoring of the soil to its original value—we look to it only as one of the attainable means of amendment. Our lands need vegetable matter. No scheme of improvement consequently will be effectual, unless the supply of that description of food is greater than the amount consumed in the raising of the crop. To enable the planter to conduct his business with safety and profit, a knowledge of the plants that he cultivates, and the soils that he tills with the modes of renovating them, is absolutely essential. In its acquisition, he sedulously avoids all theoretical suggestions, and exultingly points to facts—these, he exclaims never deceive. But they do deceive. Where the mind is not called into action to account for a result, the cause of which is not positively known, there does not exist a more uncertain guide than what is denominated experience. A large crop is made from a certain portion of his field. The grower ascribes it to the agency of some particular manure. The next season, confidently relying on the like effect by the applicaion of the same means, he finds to his amazement that this time the seed which was sown is scarcely returned to him. The experience of the first year intoxicates him with success—that of the second prostrates him with the dust. Experience therefore must be assisted by the lights which scientific inquiry affords; in other words, theory and practice

* Liebig.

ought inseparably to be united. Our co-laborers are asked not unhesitatingly to subscribe to the opinions of agricultural writers, but to seek information on the important concerns of their profession from every accessible fountain. They will then be able to appreciate the value of the knowledge, that vegetables possess a living principle—that every species has a regular organization, which requires for its support an incessant supply of food—that each plant has its period of growth, health, disease, decay, and death—that the soil, designed by nature as the bed of plants, and a depository of nutriment, is exhaustible by cultivation; hence, as an inevitable inference, that to give rest to land, and to return the substances which tillage may have deprived it, is a dictate alike of common sense, and of self-interest. But whence the meliorating action of the former? and how can the latter effectually be done without knowing what has been taken away? On these and other deeply interesting points, the mere practicalist must continue to wander in the labyrinth of doubt and uncertainty.

(To be continued.)

Note G.

Number of pounds of Sea-Island Cotton exported from the United States in

Year.	Quantity.		Year.	Quantity.	Price.	Average.*
1805	8,787,659 lb.		1821	11,344,066	12½ to 30d	21¼d
1806	6,096,082		1822	11,250,635	10 to 29d	19
1807	8,926,011		1823	12,136,688	11 to 24d	17½
1808	949,051—Embargo.		1824	9,525,722	11½ to 27d	19¼
1809	8,664,213		1825	9,655,278	15 to 42d	28½
1810	8,604,078		1826	5 972,852	13 to 30d	20
1811	8,029,576		1827	15,140,798	9¾ to 20d	14¾
1812	4,367,806 }		1828	11,288,419	10 to 22d	16
1813	4,134,849 } War.		1829	12,833,307	9 to 21d	15
1814	2,520 388 }		1830	8,147 165	11½ to 20d	16
1815	8,449,951		1831	8,311,762	9½ to 18d	13¾
1816	9,900,326		1832	8,743,373	9½ to 18d	13¾
1817	8,101,880		1833	11,142,987	10½ to 22d	16¼
1818	3,080 838 } from South-		1834	8,0~5 935	13½ to 26d	19¾
1819	3,442,186 } Carolina only.		1835	7,752,736	14 to 33d	24½
1820	6,020,101 }		1836	8,544 419	14 to 36d	25
			1837	5,286,971	12 to 40d	26
			1838	7,286,340		
			1839	5,107,404		
			1840	8,779,669		
			1841	6,400,000	20,000 bags at 320 lbs. each.	

* The difference between the extreme prices has been assumed as the medium price.

For the Southern Agriculturist.

BEDFORD HOGS.

Mr. Editor,—As it is by the results of experiments in Agriculture, that progress is made in this department of national prosperity, I presume in offering the following remarks in relation to the improvement of the breed of hogs.

Being desirous of substituting a more productive animal than that commonly found in our middle country, I made inquiries of several distinguished agriculturists, as well as practical farmers, at the North, and came to the conviction that the favourite Stock, known as the Berkshire, however valuable for a small farm, with much personal care, was not suited to the extensive ranges and slender fare to which our hogs are exposed at the South; length of limb and activity being essential to their very existence, if submitted to the ordinary treatment of our plantations, even with more than common advantages of pasturage.

I heard of the successful competition for the prizes awarded at the fairs held at Newcastle in the State of Delaware, for several successive years, of a Stock supposed to be derived from that presented by the Duke of Bedford to General Washington. This Stock had been brought into notice by Governor Lincoln of Massachusetts, who derived his Stock, as well as the story of their origin, from General Ridgely of Maryland.

In the fall of 1837, the Sow exhibited at Newcastle, with a young litter, obtained the prize and was bought for sixty dollars. Through the intervention of a friend, I obtained two of the Pigs, which arrived at my plantation in January, 1838, being then five months old. At the age of seven months they commenced breeding, and their great growth was a matter of surprise to all who saw them, even under the precaution which I deemed necessary to acclimate them, of keeping them on spare feeding. It has been my object to domesticate and bring into use this Stock, and no experiments have been made with them. The Boar exhibited by W. E. Haskell, Esq., at the Agricultural meeting in Columbia in November, 1840, and which obtained the first premium, was one of the second litter of my Sow, and the successful feeding of that animal shows not only the qualities of the Stock, but its adaptedness to our climate. According to the published statements at the time, the Boar, then eighteen months and one week old, weighed more than four hundred and fifteen pounds, having gained from the time he was taken from the pasture, at the rate of thirty pounds in seven days, until from fear of too rapid growth his food was restricted. With the common range of a barn yard only, the Pigs usually attain the weight of one hundred and fifty pounds at six months, and have, in several instances, very much exceeded that.

I have myself looked rather to results of a more general character. It is now about four years since I received the first pair, and I have reared nearly one hundred head, although I have disposed of the issue almost as fast as they were produced, reserving barely enough to secure the breed, the anxiety to retain them in my immediate neighbourhood being great. I have killed for my plantation use, both the last and present year, all that on account of their unpromising appearance I was unwilling to part with for the purpose of diffusing the Stock. To what extent the Stock has multiplied, it is impossible to say; as I have, with the exception of two Sows of the first litter and three selected since, disposed of all that were reared. I have entirely displaced my old Stock, and supplied my plantation with half-blood and higher grades of the Bedford. These I find to thrive remarkably well, and to attain nearly the size of the pure blood, especially with the Kentucky Boars.

The comparative merits of the Bedford and Berkshire Stocks are well illustrated by W. Martin of Kentucky, in your September number of 1841, and the same preference I hold to exist with greater force in this State, where the ranges are wider and the lands less fertile in provisions.

I have tried the Spanish breed, the same I suppose to be the Neapolitan, and under circumstances every way as favourable, with far less success. With reference to the Bedford, all my anticipations have been fully realized, and I have come to the conclusion that this variety, from its early maturity—its extraordinary weight without high feeding—its activity and symetry of form, and its adaptedness to the climate, having proved healthy and highly prolific, is well suited in every respect to a Carolina plantation.

JOSEPH H. DULLES,
Good Hope, on Santee.

N. B.—Having secured the Stock fully, I expect to be able to dispose of ten pair of full blooded Pigs from my imported Boar, as applied for, and weaned in the month of March, which I will sell deliverable at my place near the forks of Congaree and Wateree, or at Lewistown on the Columbia Rail-road, at thirty dollars a pair, (the price at first fixed, being much less than the cost of importation of any Stock of the least reputation); and half-bloods out of Kentucky bred Sows, at twenty dollars a pair; also a few Shoats, *at present* four or five months old, at eighteen dollars a piece. Payment may be made in Charleston, and application to the Editor, or to myself, directed to Lewistown, (Orangeburgh District.) J. H. D.

Extracts from an Address, delivered before the Greenville Agricultural Society, in August, 1841.

PERMANENT IMPROVEMENTS.

WHAT impoverishment, what ruin, what desolation has the spirit of emigration produced in South-Carolina? What wealth, what energy, what talent and virtue has it robbed her of? Look at the South-west and see there the outpouring of her citizens and her treasure! Look throughout the State and see their deserted fields and waste habitations! But this great loss of property and population is not all. The paralyzing effect which it produces on the country and those left behind, is a still greater evil. No one considers himself permanently settled. No one expects his children to live where he does, to inhabit the house he does, or cultivate the soil which he is improving. The consequence is, that he makes no permanent improvements, but works and manages his farm as if he were not the owner, but a lessee for years! The truth of this remark is strikingly exemplified by the present condition of our country. "If," said a once distinguished son of Carolina, "some desolating influence were to spread over our country and sweep from it every human being, what vestige would there be a hundred years hence, of our civilization, or even of our existence as a people?" None at all. There might perhaps be here and there a pile of rubbish, which possibly would indicate to some antiquarian that there was once a human habitation. But it would be in vain to look for those monuments of art and genius which are to be found in Rome, Greece and Egypt, after the lapse of thousands of years.

FIRST SETTLERS.

The first settlers of a country are apt to leave the impress of their character on every thing around them. It has been so in the settlement of the upper part of South-Carolina. The whole country was a dense forest, the "settler had to cut down and destroy the timber, as fast as possible, in order to cultivate the soil. The earth was fresh and rich, producing abundantly, and the only obstacle in getting a productive field, was the timber growing on it. No one thought of manuring. There was no necessity for it, and very little ability to do so. All domestic animals were permitted to roun at large in the forest, both summer and winter. As soon as one field was a little worn, another was cleared, rich and producing abundantly. This habit of clearing and wearing out the soil commenced at first through necessity, was coutinued through convenience, and adopted by the second generation through habit and education. The son had never seen his father manure the fields, and hardly knew that such a thing was ever done! In the course of time the best soil had been cleared and worn out. The owner disheartened and poor, has gone to the South-west. We must follow his example or change our system of agriculture.

WEARING OUT SOILS.

It is an idea conceived in profound ignorance, that the soil of a country must necessarily wear out, or become less fertile by long continued cultivation. With proper care and judicious culture, the soil instead of wearing out, must necessarily improve. How is it in England, in France, in Germany and Italy? A large portion of those countries has been in cultivation for centuries. Instead of becoming less fertile, they produce more abundantly than they did an hundred or thousand years since. This has been effected by manure, rotation of crops, judicious culture and good management. It is easier to manure a field than clear one, and when manured, it will produce more, and is more easily cultivated. Every farmer knows the difference between ploughing in a fresh field, filled with stumps and roots, and ploughing one where he encounters none of these obstacles.

MANURING.

Let no one say his resources will not permit him to manure his lands. Every farmer can make manure enough, in the course of the year, to manure one-third of his land in cultivation. Let him save his corn-stalks and straw, gather leaves in the woods and preserve all the litter of his barn. Let him scatter this in his stables, horse lots, his cow-pens and his hog-pens. When his litter has been sufficiently trampled and saturated with manure, it should be removed and placed in heaps, protected from rain and sun. If permitted to remain exposed to the weather, in an open lot, its strength will be absorbed by the earth and carried off by the atmosphere.

There is much to be considered too in the application of manures. This should always be in drills. The advantages are, that one-fourth will be sufficient, and you can plant the second year on the same ridge. When manures are applied broadcast they do, comparatively, little good, and are much sooner exhausted.

MODE OF CULTURE.

Inseparably connected with manuring, is the mode of cultivation to be adopted by the farmer. And here let me notice a fatal error with most farmers in this country—an attempt to cultivate too much land. It is infinitely better to cultivate one-half and do it well. This too will enable the farmer to manure better. Mr. Loudon mentions a story illustrative of this truth. A farmer had three daughters, between whom he intended to divide equally his farm. The eldest married and received her portion. On the remaining two-thirds he made more than he did on the whole. The second daughter married and received one-half of the remaining two thirds. The farmer still found no diminution in the amount of his crop!

HORIZONTAL PLOUGHING.

The most of our lands in Greenville district are undulating, and the soil has been swept off by ploughing up and down the hills. No good farmer should think of ploughing his fields but one way. Horizontal ploughing must in all cases be adopted. It preserves the land from washing, it is easier for the ploughman, easier for the horses, better for the horses, better for the corn, enables the ground to retain its moisture longer, and can be better and more easily ploughed. Corn ploughed in drills will produce more than in hills. The roots of the corn in one direction being unbroken, causes it to stand the drought much better.

CORN.

The only advantage in ploughing corn at all, is to destroy the grass, and to keep the ground loose, so that the roots may easily find their way through it. It is obvious that the plant cannot be benefited by destroying the source of its sustenance. The injury from breaking the roots of a plant may, however, be counterbalanced by the loosening of the soil. But every farmer should be very careful not to break the roots of his corn too often—if he does, he impedes its growth, and sometimes seriously injures his crop. The best farmers in this district never plough their corn more than once. They break up their ground effectually in the Spring, and plant in ridges. As soon as the grass begins to make its appearance, they run a harrow twice in each row. This tears the grass to pieces and throws the clods in the middle furrow. They next run a bull-tongue on each side of the corn. This stirs the ground when the young roots are forming, and exposes them, in some measure, to the warmth of the sun. The middle of the row is not touched. The next time they give the corn a good ploughing, and if it requires any further work, they do it with the harrow. By this system of culture, more than one-third of labor, ordinarily bestowed on the corn crop, is saved, and a better crop is the product.

ROTATION OF CROPS.

A rotation of crops should never be neglected by the farmer. Nature points out this mode of culture. If oak land is cut down, and, after being in cultivation for a number of years is turned out, a growth of pine will spring up. If pine land be cultivated and turned out, there will spring up a growth of some other trees. This is seen every day in passing through our country, and should teach the farmers a lesson as to the necessity of a rotation in their crops. The richest soil requires a change as well as that which is poorer. It will not answer well even in a highly manured garden, to plant the same vegetables for a succession of years on the same bed. The roots of one species of plants exhaust all the peculiar

qualities of the soil calculated to nourish that species. But those qualities calculated to nourish other plants are not exhausted. It is like the student reading a book. His mind may become fatigued with one work from many hours reading. He throws it down, and takes up another, which he reads with interest. Lord Hale used to relieve his mind after long and continued study, in his profession, by reading "the Arabian Nights Entertainments."

CLOVER AS A MANURE.

Connected with this rotation of crops, is a mode of manuring lands, which might be most successfully adopted in this District. I allude to the system of sowing clover and ploughing it in, as a manure. In some of the Northern States they have greatly enriched their lands, before much worn, by this process. It is highly approved in Kentucky. There, they sow a field in clover, and cut or pasture it till the third year. It is then ploughed in, and the next year planted in corn. The succeeding year, or the year after that, it is sown in wheat, and then in clover again. Great benefits would no doubt result to our lands by ploughing in an oat crop, or sowing a field in corn for that purpose.

TOBACCO.

The climate of this District, and our vicinity to the mountains, forbids great success in planting cotton. In the lower part of Greenville it may be profitably cultivated, but in the upper part of the district it can be scarcely grown at all. We must turn our attention to some other crop. I know of no plant which could be more profitably grown by the farmers of this district, than tobacco. It will yield more to the acre than any other crop. One third of the ground usually cultivated to the hand would be sufficient in tobacco. This would give every farmer a better opportunity of manuring and improving his farm. I understand there is at this time a farmer in this District who is most successfully cultivating tobacco. From thirty acres he has raised a crop which will sell at $2500! It may be asked, where shall we find a market for this plant? In reply, it should be told that Greenville District pays annually several thousand dollars for tobacco! But a market may be found any where. It is much easier carried to market than cotton, or corn, or wheat. The use of tobacco is a most detestable practice, and should be universally discouraged; but whilst men will be foolish enough to chew it, they should certainly be wise enough to make it.

SILK.

The culture of silk might, no doubt, be found highly profitable in this District. The mulberry grows well here, and some few persons have made the experiment of raising the silk worm.

Their success has been equal to their expectations. The great advantages of the silk culture are, that children whose services could be of little value on a farm, can superintend a cocoonery. It requires no large investment of capital. When made, the silk costs but little to be carried to market, and always finds a ready sale.

ORCHARDS.

Every Farmer in this part of South-Carolina should have a good orchard. It will cost but little, and nothing can add more to the comfort and pleasure of a family. It is in reality a luxury to have, at all seasons of the year, fruit of some kind or other for eating, cooking, preserving, &c. Independent of this, it is a source of profit to the farmer. With his apples and peaches, in the summer, he may feed his hogs, or he may distil them.

GATES AND BARNS.

It is said that a good farmer may always be known by his gates and fences. There is no doubt truth in the remark. If you see good gates and fences on a farm, you are very apt to see good barns, stables, and shelter for cattle. They are unerring signs of a good farmer. The time saved in passing through gates, instead of pulling down bars and fences, will amount to many days in the course of the year. If you have good fences, your crop is secured from the depredation of animals, which in some cases amounts to an almost entire destruction of it. Besides this, there is no time lost in hunting and guarding your fields. If you have good barns, your fodder, hay, straw and shucks are saved from the destruction of the weather, and contain more nourishment for your cattle and horses. Good stables and shelter are absolutely essential. Without them you cannot expect to keep your stock in good order. When sheltered and protected from the cold and rain, less food will answer all domestic animals.

LIVE STOCK.

Too much attention cannot be paid by the farmer to the improvement of his live stock. In this country nothing is more shamefully neglected. This utter neglect may be seen in almost every horse, cow and hog we find on the farms in this District. A good horse will cost no more than a scrub. It requires as much to raise a "tackey," as it does a colt of "better blood." The one will not sell for more than fifty or sixty dollars at three years old, whilst the other may be sold for one, two or three hundred dollars. The same may be said in regard to milch cows. It is the habit of most farmers, not only to have the smallest kind, but to keep three times as many as they ought. One good cow, well fed, will give more milk than four such as we generally see. Instead of keeping

hogs two or three years, half perished all the time, it would be a great saving to give them the same food in one year. Hogs should never be kept more than one winter. Every farmer knows that some hogs are more thrifty than others. Let him improve his breed by selecting such.

RAISE EVERY THING.

Every farmer should make it a rule to purchase nothing that he can raise or make on his farm. There can be no higher evidence of an unprofitable farmer than to see him purchasing his pork, his beef, his horses, his corn or his flour. He should be ashamed to have it said that he is a purchaser of any of those articles. If he thinks it cheaper to purchase than to raise, it is only additional evidence of his folly. If we look through the District for our best farmers, we shall find them selling instead of purchasing those articles.

SELLING CORN.

A most fatal error, into which many of our farmers have fallen in this district, is that of selling their corn instead of raising live stock. This custom is general on the Saluda, where they should compete with the farmers of Tennessee and Kentucky in raising horses, hogs, and neat cattle. The amount of money carried out of Greenville district every year by the purchase of horses, hogs, and cattle, is at least ten or fifteen thousand dollars! Tobacco, Irish potatoes, apples, cabbages, &c., amount to no inconsiderable sum. This is all a dead loss to the district, and might be saved, if farmers would turn their attention to raising and growing these things.

BOILING FOOD.

In feeding live stock, much corn might be saved by boiling it before it is given to them. Every farmer should have a large kettle for this purpose. It has been ascertained that one-third of the corn may be saved in this way. Being cooked, it is more nourishing and more easily digested. The trouble of preparing it is very inconsiderable. It is well known that the cob of corn contains a great deal of nutriment. A bushel of corn ground in the cob, will make one-third more of whiskey, as has been ascertained by experiment. To grind the cob and corn in a bark mill or something of the kind, before boiling, would be an additional improvement and saving.

GRASS.

More attention should be given by the farmer to raising grasses for feeding horses and cattle. The lucerne and red clover both

grow well in this District. They require a dry and deep soil. The lucerne does not require planting more than once in ten years. It may be cut five times, in the course of the spring and summer and fall! No one who has not tried the experiment can tell the saving of grain which this grass will enable the farmer to make.

PEAS.

The pea crop is too much neglected by the farmers of this District. It is made with little or no trouble, and will be found an admirable substitute for corn, when ground, and for fodder, when fed in the vine. Every corn-field should be planted in peas. If found inconvenient to gather them in the fall, the hogs, horses and cattle may be turned into the fields. In this way the farmer may save a great deal of his corn. From inattention to raising grasses, peas and oats, we very often see a farmer who makes a fine crop of corn, feed it always to his stock during the winter, and this, too, without raising any stock to sell!

COMFORT OF LABORERS.

A great object with every farmer should necessarily be, the comfort of his laborers. This is required by humanity, as well as interest. They who are half fed and half clothed, will not be able to do more than half work. Servants, thus treated, will be committing constant depredations on their masters' and neighbors' property. He who treats his slaves kindly, will have them attached to him, and he will find them faithful and devoted to his family. But kind treatment is not incompatible with industry and strict discipline. Like all other persons, negroes become idle and vicious by indiscreet indulgence.

LEARN TO WORK.

The time has passed away, if it ever existed, when farming is to be looked upon as business fit only for slaves, serfs and ignorant men. In it are now engaged some of the most talented, and many of the most scientific men of the present age. Almost every man engaged in politics or professional business, looks forward to the day when he can retire from the one, full of honors, and abandon the other with a competency of this world's goods, to enjoy the sweets of repose, and the pleasures of agricultural pursuits. How much better would it be for the young men of the present day, if they knew less of Latin and Greek, and more about ploughing and managing a farm? Instead of being drones in their professions, and gentlemanly vagabonds in society they might be useful and valuable citizens. No parent in this country, no matter how great may be his fortune, or how high his station, should bring up his children without a knowledge of labor. To learn to work, should be a part of their education. If they have property, it

will enable them to take care of it; and if they have none, it will perhaps be the means of their making something.

We have in this country no title of nobility, no hereditary rank or family influence. The unworthy son of a distinguished sire, instead of drawing respectabllity from his parentage, renders his own unworthiness the more conspicuous and the more detestable. Instead of being respected for the virtues of his father, he is only pitied and despised. He is justly looked upon as having dishonored the name which he bears, and disgraced the blood which flows in his veins.

SCIENCE OF AGRICULTURE.

Instead of being a fit pursuit only for the ignorant, there is no science or profession which requires more general information or universal learning than that of Agriculture. In the range of its study, it embraces all the arts and sciences. No one can be a good farmer unless he understands the nature of the various soils which he has to cultivate. This requires a knowledge of Geology and Chemistry. He must understand the nature and properties of the various plants which he is growing. This requires some knowledge of Botany and Natural Philosophy. He must be acquainted with the nature and disease of all the domestic animals. This requires not only a knowledge of natural history, but also of Physiology and the anatomy of animals. He must know something of Astronomy, to judge of the seasons, their changes and varieties. If he is unacquainted with machines, he knows nothing about all the implements of Husbandry. A knowledge of Entomology, or that science which treats of insects, the great enemies of the farmers, is all important. Most useful will the farmer find some acquaintance with Medicine, so that he can administer to those under his care, when sick. And even a knowledge of Law will not be amiss, in directing as to his own and rights of others.

AGRICULTURAL SOCIETIES.

Agricultural Societies have done much in the United States, and in Europe, towards the advancement of this science. Wherever they have been established, says Mr. Loudon, their good effects have been seen and felt. They create an interest in Agriculture, they make farmers ambitious of improvement—they communicate to all the members the improvement of the few—and disseminate information on all subjects connected with Husbandry. In this District, there is wanting something to excite the interest, ambition and amusement of the farmer. It is to be hoped our Society will do this. Our quarterly or monthly meetings may be a substitute for political meetings. Our shows of horses, cattle, hogs, sheep, &c., it is to be hoped will supersede the annual Races. All people require some pastime or amusements. The Athenians

had their Olympic Games, the Romans their Amphitheatres and Gymnasiums, the Spaniards still have their bull fights, and the English used to have their tilts and tournaments. The English now have their elections, political meetings, races and theatres. In America, political and religious meetings have engrossed most of public attention, as amusements and relaxation from ordinary business. Races and the Theatre are appropriate to cities and wealthy communities. None are too poor, however, to enjoy the luxury of political meetings and religious assemblages. And thus have such meetings, with too many, become mere places of recreation and idle curiosity.

In conclusion, fellow-citizens, let me ask you, how much better it would have been for the country if the time, money and attention which have been so fruitlessly spent, during the last ten or fifteen years, on political subjects, had been devoted to improvements in agriculture? If every farmer in the State had taken the same pains to inform himself as to the best system of husbandry, which he has to understand the respective merits of public men, and the various political measures which have been advocated and opposed by different parties, how much wiser, richer, better and happier would he not be? In asking you therefore to unite with us in this Society, we ask you only to pursue your own gain, your own interest and your own prosperity and happiness. In almost every part of the State similar societies have been organized, and it is to be hoped that Greenville, will not be behind the other Districts in the noble effort they are making to improve and elevate the agriculture of our country. [*Greenville Mountaineer.*

RESTORATION OF BOGS, DRAINING, &c.

A moderate quantity of water is essential to the growth of all crops; but a superabundance is destructive to vegetation. In northern climates where the evaporation is comparatively small, the wet lands are entirely worthless, while in this state. To the south, however, where the water dries up very fast, some of the wet lands are valuable for grass, rice, and even corn, if the season is not exceedingly wet. But it is rare in either north or south, to find a farm of a few hundred acres, without some injury by swamps, which fact at once evinces the necessity of artificial means being employed to give every estate its proper value. The loss of crops is not the least evil attending the wet lands of the south, for marshes, lagoons and ponds are the most fruitful sources of disease. Free the south of stagnant waters, and there is no reason why this country should be more sickly, if as much so, as the north. Intelligent gentlemen have reported, that in the region of San Antonio, in the extreme west of Texas, where it never rains, the people live to a greater age and enjoy better health, than any other part

of the world they have seen. The reason of this is, a temperate climate, entire freedom from poisonous effluvia, and the breathing of a dry and pure atmosphere. Mississippi has the character of being, in many parts, amongst the most unhealthy sections of the Union; and no doubt it is so; but the climate is not what produces disease—the cause is in the innumerable swamps of that country. The low lands of the Mississippi river extends, in many places, near a hundred miles in width, and we suppose at least half of these large tracts are utterly unfit for cultivation in their present submerged condition. The Mississippi low lands are decidedly amongst the most valuable of the west, if freed from stagnant water. Time will come, when these important tracts of country will be drained and come into great demand, but now they are the greatest annoyances of our frontier settlers.

But without looking so far as Mississippi, there is scarcely a farmer in Tennessee who does not lose something annually by boggy land. Let every one look about his own premises, and he will soon see where the evil lies. The first consideration, after seeing the unproductiveness of the land, is to learn the cause of these seeps or ponds. On some high grounds, as in the southern counties of Kentucky, the lands for a considerable distance incline to one point, where, from heavy rains, water collects, is tramped round by stock, and thus an impervious stratum is formed, becoming larger every year, till vast tracts are covered with water. In the past season, hundreds of deaths were caused by these ponds. There are two reasons, if no more, why they should be removed; the first is, they are the cause of killing maladies; and secondly, they cause great destruction of property. Most of these ponds which I have noticed, can be drained by a very short ditch, and where this cannot be done, they should be enclosed to keep stock from tramping about them, to enlarge them and fill them with filth, and it is more than probable the soil would become more open in a few years and swallow all the water.

Before the agriculturist strikes a lick at a drain, he should know the cause of the superincumbent water. After seeps are produced by water descending from higher lands, till they come in contact with a stone or some impervious mass, that stops the free percolation, and the pressure from above forces it to the surface. But more frequently there is a substratum of tenacious clay, which will not let the water pass into the lower regions, and thus a swamp is formed. If the tract of wet land is small, one short drain will generally carry off the water, but where there is an acre, or several acres, one main ditch and a few shorter ones will commonly drain the land. The premises should be accurately surveyed, for hundreds have expended vast amounts of money and labor with but little good effect, because they did not take advantage of the locations. The main point is to cut the drain at the lowest part of the saturated ground, and care must be taken that the natural course of

the water is well understood. It will filter to the distance of many rods, if the ditch or drain is sufficiently deep and the descent to it is sufficient. There are various kinds of drains, and specific directions will not answer, without knowing the exact locations of the farms that require draining. Each one must be his own judge of the direction of the drain, as well as the depth which it goes.

In England, draining is looked upon as an important science, and its good results are seen throughout the whole country. No uniform system has been, or can be adopted. Generally, two or three feet, sometimes at less, and often at a greater distance from the surface is a sand or gravelly bed, through which the water passes, but which the surface water cannot reach in consequence of the intervening clayey stratum. By the use of the augur, or pits dug for the purpose, it may be determined how deep the ditch must reach. For want of this information, farmers have labored much to no good purpose. In the south-west, the only drains I have noticed, are ditches made by the plough and shovel. The English are more tedious, as they do a great deal by the spade. Plough labor is more expeditious and equally as good. The proper plan is, after it is known to what depth the drain must go and its direction and length, or in other words, after the work is layed off, use a large plough and strong team, so long as horses or oxen can walk abreast, and then run the one horse plough and shovel out the dirt, till the ditch is completed. It is usual in this country after the drain is cut to leave it unprotected, and the consequence is, it becomes filled again in a few years. The right system is, after the drain is cut, let a narrow aqueduct be cut in the bottom, to the depth of 6 or 8 inches, so that shoulders will be left on each side. Then bring turfs and lay them across this aqueduct, with the grass side down. This will secure a perpetual passage for the water. The balance of the ditch, to within a few inches of the top, may be filled with stones, pebbles, gravel, sand, or even brush wood. Any of these will let the water seep into the ditch and escape. The topping may be done with the dirt taken out, but should be raised several inches higher than the surface on each side. Short drains, if necessary, may be made to intersect this large one. This system of draining is, perhaps, in the long run, the cheapest and best of any other.

[*Agriculturist.*

PRESERVATION OF BACON.

Messrs. Editors,—As the season is rapidly approaching when all good house-wives feel a natural solicitude for the preservation of their bacon, permit me to inform such of your readers as may not be apprised of the fact, that by white-washing their bacon, they can preserve it, perhaps, more economically and effectually, than by adopting any other of the various modes which have been recommended for this purpose. A respectable neighbor of mine

has saved his bacon in this way for the last twenty years, without the loss of a single piece. Early in the spring, after his meat is well cured, he gives his bacon a good coat of white-wash, with the common brush, on the fleshy side and on the ends of the hocks, sprinkling a small quantity of fine ashes on the moist white-wash, and hangs it up again in his smoke-house, where it is permitted to remain until it is taken down for use. The process does not injure the meat in the slightest degree. It owes its efficacy, obviously, to the fact that the hard crust it forms over the bacon, prevents the fly from depositing its eggs in it. Any other means, which would exclude the fly from all access to the meat, such as burying it in salt, oats, &c covering it with canvass bags, plastering it with ashes, &c., would, of course be equally effectual.

Never wound your meat until you use it, for the fly will be sure to deposit its eggs in the wounds. A friend of mine lost a number of hams last summer, in consequence of his wife's thrusting a knife into them to ascertain their quality.

To preserve meat well, a smoke-house should be roomy, dry, cool, and dark, and yet sufficiently open to permit a free circulation of air, otherwise your bacon will be soft, damp, and rancid. On this account, wooden smoke-houses are greatly preferable to those constructed of brick or stone.

It is a great, but very prevalent error, to smoke bacon in a wet damp weather; for by smoking it at such seasons, the "*sweat*" which then collects upon the meat, and which has a peculiarly disgusting taste, is driven into it and dried upon it, and impairs its flavor. Smoke only in dry weather. If your meat is well cured, the only use of smoking in summer time, is to expel the fly from the house.

If any of your readers smack their lips as heartily as I do over a *good old Virginia ham*, that fairly melts in your mouth, they will not fail to observe these plain directions for the preservation of their bacon. [*Cultivator.*

MAKING CANDLES.

The season of the year has arrived for families in the country to make up their supply of candles for the year, and as much trouble and extra labor is occasioned by want of skill, I will, in order to enable people to obviate this, give some brief directions for dipping candles.

The tallow when melted, should be ladled into a wooden vessel of convenient width and depth, which has been previously heated by filling it with boiling water for an hour or more. Fill the vessel within an inch of the top with melted tallow, and keep it that height by adding hot tallow or hot water. By this means the candles will be kept of a full size at the top, and not taper off to a point as is often seen with country candles.

The tallow, when used for dipping candles, should not be too hot. A temperature that will allow the finger to be dipped in without burning, is sufficiently hot, and at this temperature the candles will take on tallow very fast. The wicks should be lowered into the melted tallow gradually, and should be lifted out of the tallow so slowly that when the bottom of the candles are clear from the surface of the melted tallow, no tallow will run off them. When the candles are raised quite out of the melted tallow, the tallow will run off the candles in a stream, whereas if the candles are raised out slowly, not a particle of tallow will fall from the candles. A few trials will satisfy any person in this matter. If the tallow is boiling hot, the wick will not take on the tallow to any considerable extent. When candles are raised out of the tallow rapidly, the candles will be large at the bottom, and the tallow will extend below the wick, so that when burnt in the candlestick a piece of the candle will have no wick in it; and therefore, for burning, will be useless. Where persons have no suitable wooden vessel, an iron vessel will answer for a dipping vessel. When tallow has been thoroughly melted over the fire, should it be dirty or impure, throw into it, while hot, a small quantity of finely powdered alum, and in a short time a scum will be seen rising to the surface, in appearance like dirty froth. Skim this off as it rises. This scum will rise for half an hour or more. These directions are plain and easily complied with, and one trial will be satisfactory. Persons, by following these directions, will save more than one half the usual labor of making candles, besides having better candles. I speak from abundant experience, and therefore with full confidence.

E. M.

[*Journal of Commerce.*

A CERTAIN CURE FOR FOUNDER IN HORSES.

TAKE a large kettle of water and make it boil. Lead the horse to the kettle, if he be able to walk; if not, take the water to the stable. Commence with a swab and wash the left fetlock before, then the right, then the fetlocks behind, then wash the legs in the same manner, then the shoulders and body, rub the horse dry and he will be well in a few hours. There is no danger of scalding the horse, if the above direction be pursued. This remedy is on the authority of one of the best farriers in this place, and is worth to every farmer double the price of his subscription to this paper.

[*Illinois paper.*

HORTICULTURE.

CAPT. J. D. STROTHER'S REPORT ON HORTICULTURE,

Made before the Fairfield Agricultural and Horticultural Society, the 1st of November, 1841.

Your Committee consider their department as second to no other branch of good husbandry, and will offer a few remarks in favor of its great importance, to the attention of the Society It is that branch of husbandry which treats of the different modes of producing and collecting all kinds of fruits, vegetables, roots, herbs, plants and flowers, for the support and luxury of mankind. Nothing, we conceive, has a more handsome appearance than a finely cultivated garden, and as there is no part of the farm so well manured and tilled, so there is none which gives so great and so grateful a return to the cultivator. Who is there, who once having possessed a fine garden, and known the pleasure of daily partaking of fruits and vegetables, in all the variety of our climate, does not esteem them among the choicest blessings of his life? And, who is there, in this part of the country, who has it not in his power to have this, by cultivating his garden well? A fine garden administers to the wants of the mind as well as those of the body. To all classes of society it affords in their hours of relaxation, a pleasant recreation, and imparts to them at once a more extensive view of Omnipotence, and a greater love for the cultivation of the earth. The man who can take his children by the hand, and wander with them through his garden, and listen to their innocent prattle as they run from one flower to another, to answer all their inquiries; and to recognise in the fruits and flowers which surround him the wonderful handiwork of his Creator, in providing for the wants of mankind, possesses a source of happiness unknown to the mere mercenary worlding. The pleasures which arise from the contemplation of the beauties of the natural world, are pure and unalloyed, and are fraught with humility and benevolence. In such a walk, how many and how important the lessons you may teach your children. According to our notions of a just and benevolent being, the Deity would be pleased to see man employed in such an occupation. All classes of society must have their amusements and employments; and it is incumbent on us to encourage such as have a moral tendency, and we know of none that would conduce more to that end, than Horticulture. On the score of profit, how much might we save by having good gardens and orchards? How many hundreds of dollars do we see annually pass through this town, in the shape of apples, cabbage, onions, cider, potatoes and other

products of the orchards and gardens? We doubtless have it in our power to save all this, and it is a thing of easy attainment! We would therefore recommend to all planters and farmers to have good gardens and orchards of their own. And also, to allow every family among their slaves to have a garden, and furnishing them with seed of the useful culinary vegetables, and see that they are planted and well worked. They should also be required to plant fruit trees in their gardens.

When our slaves see their cabbage and other vegetables growing finely, they will take a pride in the cultivation of their gardens, and employ their leisure time in cultivating them; where, if they had none, they would be running off perhaps to some neighboring plantation, remaining all night, losing their sleep, and consequently in bad order for the next days work; a constant repetition of which breaks the constitution and brings on premature decay. From running about at night, they are also liable to acquire bad habits, perhaps commit some crime and get into difficulties, and as the prayer of all erring mortals is, or should be, "lead us not into temptation," so we should endeavor as much as in our power lies, to keep all temptation from our slaves; if we could follow the golden rule of "doing unto others as we would they should do unto us."

Many times, for want of employment at home in his leisure hours, a man acquires the habit of frequenting taverns to pass off his time, and by drinking a little, the habit becomes confirmed, and he is a drunkard. He ceases to work, his family comes to poverty, and finally he dies that odious death, which is a disgrace to him who was created in the image of his Maker. If this man's home had been rendered more attractive; if he had had a garden, and taken a pleasure in the cultivation of it, he would have saved himself from the disgrace of a drunkard's death, and left his family in comfortable circumstances.

To Horticultural associations we are already indebted for the introduction and production of many of our choicest fruits and vegetables? What the potato was one hundred years ago, many fruits and vegetables are now, treasures unknown or unappreciated by the great mass of our farmers. And why may not our association produce beneficial results now and hereafter? We must, however, take a pleasure in it, emulate and encourage each other, and perhaps some of us may have the pleasure of handing our names down to posterity connected with some new or valuable fruit vegetable, which is far more estimable or praiseworthy than to have our names engraved on the finest marble monument that Canova ever chiseled. Who among us would ever have heard of Mr. Heath, if he had not introduced into this country the delightful peach which bears his name? and his memory will live as long as peach trees continue to grow. The Dutchess De Angeline will live longer in the recollection of mankind, by the delicious pear

which bears her name, than she will by the costly monument which marks the place where she lies entombed. Much more in commendation of horticulture, your committee could say, but as this is the first report they have made, they desire merely to impress its importance on the minds of the members, would respectfully propose that the society raise by subscription a few premiums to be awarded at some future time, to the member who has the greatest and best variety of peaches, pears, apples, plumbs, grapes, and other fruits, to be regulated by the society hereafter. And in conclusion, your committee would say for themselves and for any future committee that may be appointed, that they are now ready, and will be at all times, to view any and every garden and orchard they may be invited to see; to eat of all nice fruits and vegetables that may be sent to them, and to notice all such in future reports; and if premiums should be given by the society, to award the same. J. D. STROTHER, *Chairman*

[*Temperance Advocate.*

VEGETABLE GARDEN.

FORCING CUCUMBERS.

To produce Cucumbers at an early season, should be an object of emulation with every gardener. The business of forcing them should commence about eight or ten weeks before the fruit is desired, and a succession of plants should be raised to provide for accidents. Some choose the Short prickly, others, the Green Cluster and Southgate; and seed that is two or three years old is generally preferred, as it is not apt to run to vines.

The seed is generally sown in pots or boxes of light rich mould, and placed in a hot-bed; and some sow the seeds in the earth of a small bed prepared for the purpose. In either case, as soon as the plants have fully expanded their two seed leaves, they may be transplanted into pots; put three plants into each pot; when this is done, apply water warmed to the heat of the bed, and shut down the glasses, keeping them a little shaded by throwing a mat over the glass, till the plants have taken root. When they are about a month old, they will be fit to transplant into the fruiting bed.

Well preparing the dung, is of the greatest importance in forcing the Cucumber, and if not done before it is made into a bed, it cannot be done after, as it requires turning and managing to cause it to ferment freely and sweetly. Fresh dung from the stable should be laid into a heap, turned three times, and well mixed with a fork; if any appears dry, it should be made wet, always keeping it between the two extremes of wet and dry, that the whole may have a regular fermentation.

A dry situation should be chosen for beds to be formed on, so that no water can settle under the dung. The substance of dung from the bottom of the bed should be from three to four feet, according to the season of planting, and the moulding should be done as soon as the bed is settled, and has a lively regular tempered heat. Lay the earth evenly over the dung, about six inches deep; after it has lain a few days examine it, and if no traces of a burning effect are discovered, by the mould turning of a whitish colour, and caking, it will be fit to receive the plants; but if the earth appears burnt, or of a rank smell, some fresh sweet mould should be provided for the hills, and placed in the frame to get warm, at the same time, vacancies should be made to give vent to the steam, by running down stakes.

After the situation of the bed has been ascertained, and the heat regulated, the hole should be closed, and the earth formed into hills; raise one hill in the centre under each sash, so that the earth is brought to within nine inches of the glass; in these hills, plant three seedlings, or turn out such as may be in pots, with the balls of earth about their roots, and thus insert one patch of three plants in the middle of each hill. The plants should be immediately watered with water heated to the air of the bed, and kept shaded till they have taken root.

The temperature should be kept up to 60°, and may rise to 80° without injury, provided the rank steam be allowed to pass off; therefore, as the heat begines to decline, timely linings of well prepared dung must be applied all round the frame; begin by lining the back part first; cut away the old dung perpendicularly by the frame, and form a bank two feet broad, to the height of a foot, against the back of the frames: as it sinks, add more; renew the linings around the remainder of the bed as it becomes necessary, and be careful to let off the steam, and give air to the plants at all opportunities.

Give necessary waterings, mostly in the morning of a mild day, in early forcing; and in the afternoon in the advanced season of hot sunny weather. Some use water impregnated with sheep or pigeon's dung. As the roots begin to spread, and the vines to run, the hills should be enlarged by gathering up the earth around them, a supply of good mould should be furnished to gather up as required, for earthing around the plants.

When the plants have made one or two joints, stop them, after which they generally put forth two shoots, each of which let run till they have made one or two clear joints, and then stop them; and afterwards continue throughout the season to stop them at every joint; this will strengthen the plants, and promote their perfecting the fruit early.

The following artificial operation is recommended by Abercrombie, Phial, and other writers, as essential to the production of a full crop of Cucumbers under glass. In plants more freely

exposed to the open air, the impregnation is effected by nature. Those which some call false blossoms are the male flowers, and are indispensable in this operation.

"The Cucumber," Abercrombie observes, "bears male and female blossoms distinctly on the same plant. The latter only produce the fruit, which appears first in miniature, close under the base, even before the flower expands. There is never any in the males; but these are placed in the vicinity of the females, and are absolutely necessary, by the dispersion of their farina, to impregnate the female blossom; the fruit of which will not otherwise swell to its full size, and the seeds will be abortive. The early plants under glass, not having the full current of natural air, nor the assistance of bees and other winged insects to convey the farina, the artificial aid of the cultivator is necessary to effect the impregnation. At the time of fructification, watch the plants daily: and as soon as the female flowers and some male blossoms are fully expanded, proceed to set the fruit the same day, or next morning at farthest. Take off a male blossom, detaching it with part of the footstalk. Hold this between the finger and thumb; pull away the flower leaves, or petals, close to the stamens and antheræ, or central part, which apply close to the pistil in the bosom of the female flower, twirling it a little about, to discharge thereon some particles of the fertilizing powder. Proceed thus to set every fruit, as the flowers of both sorts open, while of a lively full expansion; and generally perform it in the early part of the day, using a fresh male, if possible, for every impregnation, as the males are usually more abundant than the female blossoms. By this management, the young fruit will be soon observed to swell freely."

Cucumbers attain the proper size for gathering in from fifteen to twenty days after the time of setting; and often in succession for two or three months or more, in the same beds, by good culture. [*The Young Gardener's Assistant.*

SOWING SEEDS, AND CAUSES OF FAILURE.

Much of the complaint which is made of the failure of seeds, is owing to the want of proper care in sowing them, or to other circumstances than their bad quality. Many kinds of seeds are very small, and if these have more than a slight covering of earth, they will not vegetate. And, on the other hand, when slightly covered one or two days of hot sun will dry the earth, so that if they have sprouted they will be inevitably destroyed. Some kinds of small seeds will not vegetate well unless the earth is rolled or pressed firmly in contact with them. (Thus it will be seen that small seeds should be sown in fine earth, covered lightly, and rolled or pressed down, and the bed should then be shaded from hot sun and

watered frequently in dry weather.) Some seeds have a hard shell or pericarp, and require several days *soaking* before sowing, in order to cause them to vegetate freely. If these are sown without any preparation, and dry weather ensues, they will invariably fail. Other kinds, natives of warm climates, will be sure to rot if sown when the weather is cool and moist; and some even require a good hot-bed to cause them to vegetate. On the other hand some kinds require cool moist weather, and will not grow if sown late, when the weather is hot and dry. Again, sometimes the seeds vegetate well, but before the plants have become fairly visible, they are destroyed by the myriads of insects which often infest the ground in summer. These are a few of the many causes which every experienced gardener knows frequently prevent the growth of seeds; but the failure of which is often attributed to their bad quality. [*New Genessee Farmer.*

FLORICULTURE.

CHARACTER OF ANNUAL FLOWERS.

AMONG florists and gardeners the term annual * is given to those flowering plants which are sown in spring, and which blow and die in the summer or autumn immediately ensuing, so that in fact the greater number, so far from actually living a year, as the term annual would imply, live only a few months. Several of the plants also usually included among annuals, such as marvel of Peru, are only annuals with respect to the common mode of cultivation, the roots being really perennial, or polycarpous, and by a different mode of management might be made to blow for many successive seasons. Those plants, again, which are really annual and once-flowering, may be continued for an indefinite number of seasons, by slips or cuttings, the only certain mode indeed of preserving fine varieties of double ten-weeks stocks, and some others.

With reference to the climate of Britain, annual flowers are conveniently divided into

1. Hardy Annuals, which can stand all weathers.
2. Half-hardy Annuals, which can bear no frost.
3. Tender Annuals, which will not thrive in the open air.

These divisions however run into one another by imperceptible gradations, for several of those ranked among tender annuals may be kept out of doors during one or two of the hotter months, though they do not in that case grow so luxuriantly and fine as when sheltered.

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* From the Latin *annus*, "a year."

HARDY ANNUALS.

The flowering plants which are denominated hardy, are such as are capable of enduring any ordinary weather incident to our climate, such as the frosty mornings not unusual in April, and even in May, as well as the sharper frosts of March, provided always, that the plants be advanced beyond their seed-leaf, when exposed to sharp frost; otherwise, even the hardiest may chance to be cut off, as we have seen the young leaves of the oak, and the young shoots of the still hardier ivy, nipt and destroyed by an accidental night's frost in the early summer.

Preparation of the Soil.—As one of the chief points in the cultivation of annuals is to have the seed germinate well and quickly, and to get the plants into their second leaf; it is obvious, that a soil either very light and dry, or very heavy and wet, will be alike unfavourable in ordinary seasons. Because, in light dry soils, in a cold dry spring, the seeds have neither enough of warmth nor moisture to dissolve their albumen, and stimulate the embryo; and in heavy wet soils, the embryo is rendered dropsical, and perishes.

These evils must be obviated as far as possible, by suitable digging, or by artificial shelter, as shall be afterwards shown. The sludge from a pond or a canal, if it can be procured; or in lieu of this, some well-rotted dung, leaf mould, or marl, dug into a soil too light and dry, will tend to make it retain water, more particularly if it be raked very fine, or rolled with a heavy roller. In heavy wet soils again, an opposite course must be pursued, by repeatedly rough digging, by avoiding fine raking, or rolling, and by digging-in long dung, lime, and ashes, (wood ashes if they can be had, or coal ashes in moderation,) so as not to over-dress the soil with them. In very wet soils it might even be advisable to raise little hillocks about a foot in diameter, and less or more than a foot high along the borders, for annuals, as we have seen done in the north of France.

Choice of Sorts.—As the sorts of hardy annuals, more or less cultivated in our gardens, amount perhaps to more than one thousand, and are yearly increasing, it is obviously impossible to introduce them all, or even one-half of them, into any ordinary garden; while, in smaller gardens, the choice must be very much limited. In the selection, therefore, a good deal must depend on individual taste, and sometimes on the accidental procuring of seeds. A few general remarks, however, may not be out of place on the disposing of the plants according to their colours and their several heights.

"Colours," as Lord Kames well remarks, "when varied within certain limits, though without any order, are pleasant, as in the instance of the various colours of plants and flowers in a meadow; increase the variety, and crowd the whole into a small space, and the effect will be injured; but not if various colours are placed at greater distances apart. The rules of the contrasts and harmonies

of colours are derived from nature, and are the following: yellow, red, and blue, are contrasts in all their shades, and the tints formed by the union of any two of these form harmonising colours, between the contrasted ones, and not only so, but also more striking contrasts. Blue and red, for instance, form violet, and violet is the highest contrast to yellow, while green and orange are the highest contrasts to red and blue, as crimson has its contrast in deep green, and its harmony in violet. Other contrasts and harmonies may readily be made out on the same principles."—(See *Clarke on Painting.*)

As to height, the low-growing sorts, from a few inches to a foot, ought to be placed nearest the edge of a border; and behind these such as are taller, gradually increasing according to the distance from the edge, like the steps of a stair-case, or rather, if possible, like the gradual slope of an acclivity. It will be enough, however, to attend to this generally, for it cannot always be carried to great nicety, since variation of seasons often affects the growth in height.

Seed sowing.—The best time for sowing the seeds of annuals will in some cases depend on the time when the plants are required to blow, and in others, on the species; for some of even the hardiest species are readily cut off by frost when in the seed leaf, which do them little injury when farther advanced. Such as are sufficiently hardy to stand through the winter, in some cases will make finer plants by being sown in the autumn, as was long ago recommended by Miller in the case of the common pheasant's eye, *(Adonis autumnalis)*, which never does so well when sown in spring. Tall larkspur and *Collinsia grandiflora* are other instances of the same. Even sweet peas may often be got through the winter in this way, like the winter crops of kitchen peas.

The species, however, which can be safely sown in autumn, are too few to depend upon for a varied show of annuals, and therefore the general sowing should be in spring, beginning with some of the hardier sorts as early as February, even at the risk of losing the trouble and the seed by its not coming up or being cut off in the seed leaf. Successions may also be sown of some sorts every fortnight, which will of course produce a succession in the flowering; though, as the season advances, the latest sown ones, owing to the greater warmth of the weather, will make such rapid advances of growth, as greatly to diminish the intervals of successive flowering.

The middle or end of March will be the best time for a general sowing, and even this is rather too early for several sorts, such as Love-Lies Bleeding, *(Amaranthus caudatus,)* which frost or cold winds cut off in the seed-leaf. In cases of this kind, second or even third sowings may be made when the first has evidently failed.

The mode of sowing is to make circles of from four to twelve inches in diameter, according to the size of the sorts along the

borders, making the soil smooth, scattering the seeds evenly and not too thick, and covering them lightly by sifting mould over them. The rake is not a convenient implement in these sowings.

An excellent mode of protecting the seedlings of annuals is to invert, over the small circles where they have been sown, flower-pots of proportional size, raised above the soil, by means of bits of wood or brick, to the height of an inch or more, to admit air. In the case of severe weather, they may be placed down on the surface, and the hole covered with a bit of slate or tile.

The flower-pots over the seeds after the first ten days ought to be examined every two days, and as soon as the seed leaves are seen pointing through the ground, light and air should be admitted, by raising the rim of the pot with pebbles or other props to the height of two or three inches. On the plants getting into their second leaf, and acquiring a little vigour, the pots may be removed altogether; unless the weather prove bleak, when they may be replaced, as they should always be during the night, where the trouble of doing this is not an objection. At this stage of growth slugs and snails must be watched, or they will frequently devour all the young plants. These flower-pot protectors are very advantageous for keeping the seeds in the dark, and the soil sufficiently moist till germination commences; for keeping the seeds warmer, by preventing the loss of heat through evaporation and radiation from the soil, and concentrating the sun's heat through the pot; for warding off accidental frost, and, what is no less important, accidental heavy rains, which often wash the soil off the seed, and even the seed itself away; and for screening the seed from the depredations of birds, of mice, and of cats.

When the inverted pots are not used, it will be advantageous, if the weather be dry and not very cold nor bleak, to give occasional light waterings, with a fine rosed pot, both before and after the plants are come up. The evening is the best time for watering in mild weather; the morning is best when there is frost during the night. As soon as the plants are about an inch high, they ought, according to their kinds, to be thinned out, to admit light and give room for those left to grow strong. The larger sorts should be thinned out to a foot and a half, or one or two plants may be left in each clump; others to six inches, or leaving three or five plants, while the dwarf sorts, unless they have been thickly sown, require but little thinning.

The best of the thinned out-plants may, if wanted, be pricked out into such vacant spaces as there may be in the borders or the shrubbery.

Little more will be requisite during the growth of the plants, than to keep them free from weeds, and should they grow too close, or crowded, to thin them a second time. The taller sorts will require to be supported by stakes, taking care that they are not

tied up too formally and stiffly, and that this be attended to rather too early than too late, when the plants have fallen down and lost their form. Staking them early will cause them to occupy less space, and by allowing more free exposure to light will cause them to blow finer. It is quite a mistaken taste, as bad as the pretended imitations of nature reprobated in a preceding page, to let flowers straggle about in their natural luxuriance. Neatness will in this case be more according to the true principles of taste in gardening, and preferable to the untidy irregularity sometimes so erroneously recommended as natural.

Mode of accelerating the growth.—When hardy annuals are required to flower earlier than they can be brought to do by sowing them in the open borders, they must be forwarded in the same way, as will be pointed out for half-hardy annuals—by means of artificial heat and a shelter. Those who have not the convenience of either artificial heat or of a garden frame, may sow a few in pans filled with light rich mould, kept in doors, like geraniums, myrtles, and other room plants, taking care to keep the earth moist, but by no means wet, till the plants are fit to prick out in the borders when the weather becomes warmer.

Mode of transplanting.—When the plants, either reared in the pans in-doors, or in a frame or a hot-bed, are fit for transplanting, cloudy rather than showery weather should be chosen; and if this does not occur, the after part of the day, towards evening. It is important to take up as much earth with each plant as will adhere to the fibres of the root; some plants, indeed, such as poppies, will not bear transplanting, on account of the fewness of their root fibres.

Each plant should be fixed in its new place so firmly as not to come out when gently pulled. In all cases, even in rainy weather, it will be indispensable to give a copious watering immediately after transplanting, and to leave delicate sorts for a few days with flower pots or cabbage leaves.

Seed saving.—As all these plants generally produce plenty of ripe seed in autumn, and soon after wholly perish top and root, care should be taken to save proper supplies of seed of the different best sorts, according as it ripens in perfection, whereby to have plenty for sowing the ensuing spring to raise a production of new plants for flowering the following summer, observing to collect them when they are dry. If they are gathered in the open kind of pod, keep them in an erect position till the seeds are dressed out. Heartsease seed may be collected just before the opening of the capsule, when it becomes erect, and yellowish brown. Many of the kinds keep their seeds best when retained in the seed vessel, till near the season for sowing them, remaining in this way more plump, and being more vegetative; but when thus preserved, they should be gathered perfectly dry and ripe, and be kept in a dry (not a hot) room. When the seed is required to produce double

flowers, it must be collected either from plants with half double flowers, or from those growing near double flowered sorts of the same species. The seeds of composite flowers, *(Syngenesia,)* will more readily become double if the seeds of the circumference only be selected.

In some sorts the scattered, or self-sown seed, disseminated from the plants on the borders, will often come up naturally early in the spring, such as fair-eye, larkspur, prince's feather, persicaria; or in autumn, as pheasant's eye, if permitted to stand, will flower sooner than the artificially-sown plants; but as some of these often rise irregularly, they may be transplanted while young in some regular order, though as those are only chance productions, we must always perform the regular sowings, without depending on such a supply.

Propagation by slips or cuttings.—When any fine variety is accidentally produced, and there is doubt either of it ripening seed, or of that seed not coming true, the variety may be preserved by taking cuttings, if such can be obtained, from a branch or shoot that does not show for bloom, or when this cannot be had by pinching off the blossom buds before planting the slip. Except in such cases, it is rarely necessary to propagate by cuttings, though these, when protected in a green-house during winter, will blow earlier the following spring. [*Flower Garden.*

THE ORCHARD.

THE FRUIT GARDEN.

We suspect that but few people are aware of the great number of fruit trees that would grow well on *half an acre;* but it may be easily shown that a lot containing that quantity of land, would accommodate *one hundred trees,* if set fourteen feet and nine inches apart. It is true that some of the kinds which we shall name, would spread in a few years so as to crowd each other at this distance, and overshadow the whole surface of the ground; but we do not think these circumstances constitute any valid objections to such arrangement.

Most, if not all, of our fruit trees require frequent pruning. By removing the stunted branches, and encouraging new and vigorous shoots, much larger and better flavored fruit is produced; and it will generally be found that the most spreading limbs are the most proper to be amputated, independent of their interference with other trees. Not that we would recommend high training, for it is a great convenience to have the fruit within reach, so that neither a long pole, nor a long ladder shall be necessary.

The overshadowing of the ground is in some respects beneficial. The grass will not be so injurious to the trees; and if hogs run

within the enclosure, there would be little to complain of, while their manure would keep the soil in good condition.

To give our readers, however, a clearer view of the luxuries which may thus be brought within their reach, and which would supply them through more than half of the year, including summer and autumn,—we will mention the kinds that may be accommodated on such a piece of land.

15 Cherry trees,
25 Pear do.,
12 Plum do.,
8 Apricot do.,
20 Peach do.,
10 Early Apple do.,
10 Quince do.

100

Now what farmer is there, who could not afford to appropriate half an acre for this purpose? But besides this, he would have a safe yard for his hogs when they are disposed to trespass. Their value in a fruit garden, as destroyers of insects, is of great account. The proprietor of one, where hogs were not permitted, once remarked to us that much of the fruit was *wormy*; and in a remote part of our fruit garden, less frequented by them, the plums and cherries in some seasons are very inferior, while those which grow nearer to *the trough*, are generally free from such defects.

In some situations, however, where the fruit garden is to be of greater extent, perhaps it might be better to plant the trees in a different manner. If placed in rows *thirty* feet apart, more or less, and set *five* feet apar in the rows, the ground between them might be cultivated with the plough, excepting a space of three or four feet in width *on each side* of the rows. This might remain as a pasture for the hogs, while peas or any other vegetables that would furnish food for them, might be sown on the cultivated part. Our experience in this line would warrant us in saying that such a system of culture would be economical and successful.

[*New Genesee Farmer.*

TRANSPLANTING TREES.

Although we gave some directions last season, in regard to transplanting trees,—yet we feel warranted in calling the subject up again on account of its great importance, and because it is so little understood by many persons who ought to cultivate trees.

When they are taken up in the nursery, care enough is not commonly taken to guard the roots against drying or freezing. Often times they are carried many miles in an open wagon through warm sunshine, without as much as a blanket to protect them, and per-

haps kept a day or two in this state. If the fibrous roots are not all destroyed by such treatment, at least the *spongioles*, (tumid ends of the fibres,) must be all withered; but frost when it reaches them in this uncovered state, is not less injurious if they are allowed to thaw in the open air. Bury them therefore without delay, and keep them so till the frost is all extracted. Even peach trees, which are more tender than pears and apples, have survived when planted in a frozen state. In short, guard them at the time of transplanting from both cold and dryness; and reflect how much a fresh wound through our own skin would suffer from exposure.

It is not uncommon for a farmer to determine on planting an orchard, without stopping to consider whether his ground is in a suitable condition, or not. Perhaps it is covered with grass—a meadow or a pasture. Holes are then dug just large enough to admit the roots of the trees; and if a prong should project too far, and be too stiff to bend in, a side cut is made for its special accommodation. When the roots are covered, the job is finished for that season. A friend of ours, three years ago, procured pear trees from our nursery; planted them in the manner we have described; and the season proving favorable, all of them lived, which however, he had no right to expect; and they continued to live as he informed us to-day, bnt with no more growth perhaps than just to keep them alive. Now what has been the result of this course? All the time since they were planted has been lost in regard to them—the period for gathering their fruit has been deferred; and the money so invested has produced no interest.

Ground to be appropriated for an orchard or fruit garden, should be ploughed deep, and rendered perfectly mellow before the trees are planted out. No better crop can be selected for this purpose, than potatoes. To those who intend to have things done *in the best manner*, we would recommend holes of six feet in diameter, and eighteen inches deep; but those who feel as if they could not work in that style, may dig holes four feet in diameter; and then the following directions may be useful:—

Lay the rich soil at the side of the hole; but the yellow or sterile subsoil throw back, so as to have it out of the way, and not in danger of mixing with the better materials. Chip-dirt, or something similar, should be mixed with the earth in filling the hole—perhaps one-fourth, beginning from the bottom. All trees that we have tried, seem to luxuriate in such a soil. Set them nearly at the same depth as they stood originally in the nursery; but then the earth should be raised about six inches above the level of the ground round the hole, to allow for settling—otherwise the tree in a year or two may stand in a depression.

It is important to have fine earth to throw amongst the roots, leaving no hollow, but every fibre coming in contact with the soil; and it is a good practice when filling in, to shake the stem from time to time, and inch or so up and down, to let the earth settle in

between them. When it is all filled in, press the earth down firmly with the foot.

There is another way of planting trees that may do however, when a man has no spade, or is unwilling to use one; and that is, to plough trenches where the rows are to stand. Broad hoes or shovels well worked would soon make the necessary excavation; and the rich mould may be removed into it by the scraper, at the same time taking care not to mix with it the sterile subsoil.

Well, what next? Why, have every tree fastened to a stake, so that the wind shall not shake it and loosen its roots; or by pressing the stem against the earth near the surface, make a hole down which the air can reach them and dry them. It is seldom, if ever, that a young tree does well when it is bent about in that manner, either by the wind or by the pigs. If the stake is to be upright, it should be set close to the stem; and as it might injure the roots if driven in amongst them, we prefer driving it before the tree is set, which can then be placed near the stake without danger. Sometimes, however, we drive the stakes *slanting* into one side of the hole, and thus avoid bruising the roots. Straw bands are the best for fastening, because if we wrap the band once round the stake before the tree is connected with it, it prevents them from chafing.

When the trees are planted, they are not to be forgotten. Neither horses, nor cows, nor sheep, must approach them. If hogs are permitted to range there, first and foremost, tie branches of the sweet brier round every tree as a sign for these animals to keep their distance. Hogs will take hints of this kind, and faithfully observe them.

Not done yet? No—we have some more advice to offer of great importance. Strawy manure from the stable or barn-yard, may be very usefully employed round the trees to stimulate their growth, to keep the ground cool by shading it from the sun, and to keep it moist by retaining the light showers that fall through the growing season. But this is not all. As often as once a month, the litter should be raked off, and the ground round each tree well hoed to the *distance* of two or three feet, and to the *depth* of three or four inches. See that the workmen do it faithfully, for some may think an inch is deep enough; and then replace the manure.

A tree planted and treated in the manner recommended is almost sure to grow, if the soil is not worked when it is too wet; and will grow many times faster than one that is neglected. Besides it will come much sooner into bearing, and always bear larger and better fruit. [*New Genesee Farmer.*

ON THE CURCULIO.

To the Editor of the New-England Farmer:—Dear Sir,—I have been gratified by the perusal of Dr. Burnett's communication in the Farmer of the 11th inst. on the subject of the Curculio. There are few insects more destructive to our cultivated fruit than the various species of Curculio; and it has long been my desire to see among fruit cultivators a union of efforts for its entire extermination. That the extermination of this pestiferous race is in our power, I have no doubt. But however valuable the experience and observations of Dr. Burnett, according to my experience something more is necessary to render the remedies infallible. It is well understood that it is by the mode of propagation that this insect effects the destruction of our fruit. The female parent is led by unerring instinct to deposite her eggs where the grubs or worms will be supplied with nutriment as soon as required; it continues however, but a short time to receive its supply from the plum or apple in which it is embedded, and a continuance of existence depends on its finding and entering the earth, where in its chrysalis state it remains during the ensuing winter. A part of this progeny find a vehicle of conveyance to the earth in the immature fruit, containing them, falling to the ground; but a considerable portion are known to anticipate their future destiny by means of a web of their own forming, by which they web themselves down, leaving the fruit in its ruined state on the tree. Thus they elude our vigilance and cheat us of our finest fruit. We should now use our best endeavors to intercept their progress into the earth. In the first place, let all wormy fruit as soon as discovered, be immediately destroyed, and not suffered to be one hour on the ground for the worm to escape. Next, there are many materials which if spread under the tree to the extent of its branches, will effectually prevent the descent of the grub into the earth; these are lime, wood ashes, fresh sea weed, ground bark from tan-pits, coal ashes, &c. These substances, except the two last, are very beneficial to the soil. In the spring the same materials must be employed to prevent the ascent of the female beetle to deposite her eggs on the tree.

This course if adopted in addition to the judicious measures recommended by Dr. Burnett, we may be assured will in a few years exterminate not only the curculio, but the canker-worm, and many other noxious insects. It is possible that the curculio may fly over a fence from a neighbor's garden, but if all the cultivators will unite in the measures recommended, no mischief need be apprehended from that source. Let us then be vigilant in our warfare.

Not many years since an old English pear tree came into my possession; it had for several years been so greatly infested by the curculio, that one half of the fr it fell to the ground in a wormy, immature state. For four years last past, I destroyed every wormy

pear that fell from the tree; this has effected a very essential improvement in the condition of the fruit. I collected some of the worms taken from these pears and put them into a box of earth in the cellar; they lived through the winter a few inches below the surface, but in the spring they either died or made their escape; the experiment is worth repeating.

There is another process to be recommended, in which I have great confidence, as a part of our warfare against the curculio. It is, to make a direct attack upon the female beetle while she is about to puncture the fruit to engender her young brood. This may be done by throwing from a garden engine or Willis's excellent syringe, a liquid substance that will create a sort of deleterious atmosphere which will compel her to quit the tree, and will destroy the vitality of her eggs, should they have been deposited. I will name the following articles for this purpose:—the composition of sulphur and lime recommended for grapes in Mr. Kenrick's Orchadist, page 328; a strong decoction of tobacco or snuff; chloride of lime; a weak solution of potash or even soap suds. These materials, if showered over the trees and fruit, would prove so offensive as to force the female visitor from her generating process. The most proper time for this operation is in the evening, in order to meet the enemy, whose attack is supposed to be during the course of the night. This operation should be repeated several times during the week, from May to August, and the tree should frequently receive a thorough shaking, by which the insects will be greatly disturbed, and made to fall to the ground. Should my plan be deemed too onerous, the cultivator who may adopt it in full or even partially, may be assured that (in my opinion) he will have no cause to regret his labor.

Respectfully yours,

JAMES THACHER.

Plymouth, March, 18th, 1840.

GRAFTING FRUIT TREES.

IT is now a proper time to graft fruit trees The grafts may be cut a few days before setting from the last summer's growth, about one inch below the joint—may be cut any time, but best between the middle of October and the 1st of March, and covered in moist earth until wanted for use. When you commence grafting, you have nothing to do but dig around the root of the tree, in whose root you intend to set—when you find a root half an inch in diameter, cut it loose from its mother and raise the outer end of it a little, so that you can make a split in it about an inch or more from the end—then sharpen the graft just at the joint, with one side a little thicker than the other, and open the split end of the root, and slip the graft therein, with the thin side towards the small end of the

root—cover it even with the surface with fine earth, and it will sometimes grow to the height of six feet in one summer.

You may in like manner cut at or a little below the surface, any scion whose root is unconnected with the mother stock, and make a split in its stump, and sharpen your graft in the same way, and open the split and set it in the stump about half an inch below where it is cut; taking care to set your graft so as to cross the bark of the stump, and not perpendicular—the last process perpendicular is so apt to miss taking the sap; but if you set your graft cross or quartering, you cannot miss. You will be careful to cover it with fine earth two or three inchess deep, and you may depend on success.

I have the honor to be,

Very respectfully, your obt. servt.

ELISHA HOUTT.

Bloomfield, Edgar County, (Ill.,) March 16, 1841.

SOIL MOST SUITABLE FOR APPLE TREES.

THE successful cultivation of the apple depends very much on the suitableness of the ground they are planted in. The size and flavor of the fruit, the general health and duration of trees is most commonly the result of good or bad soil. Climate and situation also affect both trees and fruit; but not in the degree in which the same are affected by the qualities predominant in the land. Of all the different descriptions of soil to be met with, that of a soft hazel loam, containing a small portion of sand, seems to be most congenial to the apple generally. In such soil the tree is seen to flourish longest, is most productive, and remains freest from disease or attack of insects. A great depth is not requisite; eighteen or twenty inches deep being quite enough, provided it be on a dry subsoil of gravel or loose rock. If the bottom be wet, the trees should be planted high, and every means taken to drain the ground. A wet bottom of gravelly clay should be avoided if possible.

Deep rich soils in sheltered situations are not the most proper for the apple, for it is often seen that apple trees succeed well in any kind of loam, though it be not more than one foot in depth, so as the bottom is sound and dry, the roots take an extensive horizontal range, the young wood is always of more moderate growth, and better ripened than when roots strike deep into the ground.

Although local circumstances often control the works of the planter, compelling him to fix on a site where the soil may not be recommended above; he must in this case, endeavor to make the soil by trenching, draining, and by addition of the qualities wanting, bring it as near to the standard as possible.

SITUATION AND ASPECT FOR PLANTING APPLE TREES.

The situation of an orchard should neither be in the bottom of a narrow valley, nor on the top of a hill: in the first, the young wood is never so well ripened, the buds are often too early excited in the spring, and their frosts are always more intently felt: in the second, fruit-bearing trees are always too much exposed to winds. The most desirable site is the side of a hill which slopes gently to the south-east, that being the most sheltered situation in this western country. But when the violence of a west wind is broken by an intervening rise of ground, a south-west aspect has been found equal to any. [*Western Farmer and Gardener.*

MISCELLANEOUS.

A BEE HOUSE.

Dear Sir,—I think of nothing to mention except my Bee House. Being, (like most of Adam's race,) fond of honey, disliking to kill the honest laborers, and withal rather afraid of them in swarming time; I undertook by housing them, to secure all the desirable ends in the case. I built a house 6 feet by 4; posts 9 feet. It was a frame and well covered, with tight floor, and ceiled up with siding and filled in with sand, so as to keep the temperature as uniform as possible On the south side, about 3½ feet from the ground, I bored 8 small holes for the ingress and egress of the bees; on the outside placed a narrow shelf to alight on, and inside formed a travelling way to the log which contained the swarm, and which was raised up to the proper height by benches. The log lay horizontally, and their entrance was by a small hole in the side. They continued to swarm, and would not make honey outside the log. In the fall I killed them—bought a swarm which had been hived in the usual manner. Early in the spring I put up strong pieces of board across the house, and placed the hive or germ upon them—they were placed edgewise, and were 3 inches deep by 1 inch thick. On two of these I rested the hive, leaving it open at the bottom, and forming a travel-way up to the bottom of the hive from the places of entrance by a narrow thin board. Placing more cross pieces firmly about 12 or 14 inches below the hive to support the comb, I locked up the door. Early in the summer, I looked in and found that the bees had filled the hive; and as there was no bottom to it, had continued to work down towards the floor. They also began on the outside of the hive, and by fall had covered the lower half of the hive all round with white comb, to the depth of from two to six inches. They had also carried down the comb toward the floor, about twenty inches below the bottom of the

hive; fastening to the cross pieces as they went along. We could open the door and behold their labors, and often gratified our visitors in that way. In cold weather we cut off a quantity of honey from the outside and under the hive. Part of it was very good, part was filled with bee bread, which surprised me; as I supposed the old comb in the hive would contain all the young bees, bee bread, &c. I am confident they have never swarmed. Now comes the query—are there as many bees in my house, as there would be in three or four hives, swarmed in the usual way? and next, will the bees continue to increase in numbers in the house in the same ratio? If so, they will fill my house with honey in three years, I presume. How soon can I cut off from the cross pieces and remove entirely the old hive or germ, without breaking up the community? I have felt some anxiety on this point. I shall inform you if you desire it of the farther progress of the experiment, which I consider, so far, successful. I ought to have said that the swarm was a very light one; and that they had access to a field of buckwheat, distant 50 rods. This communication was not written with a view to its publication. If, however, any of the facts may be of use to you, use them freely, changing their position and dress at your own discretion.

Yours very truly,

MARCUS B. OSBORN.

Geneseo, Henry County, March 31, 1841.

HENERY—NOT HENRY.

Henery—says our neighbor Adams of the Temperance Gazette, is to *hens*, what piggery is to pigs, or rookery is to rooks,—he might have added—or hoggery to hogs, and cowery to cows. We are glad to find him so learned in these matters, and especially to see him willing to turn his knowledge to a *practical account*.

During a late visit in Winthrop, he noticed the henery establishment of Rev. D. Thurston, which as he thinks it an improvement on the common method of keeping hens, he thus describes in the last Gazette:

IMPROVED HENERY.

We are not sure that *Henery* is a *dictionary* word, but we suppose that our readers will understand it. If not, we would say that henery is to hens, what piggery is to pigs, or rookery to rooks;—a place where these useful feathered bipeds congregate, and perform the appropriate duties of their station We lately met with one of these establishments, which seemed to us so excellently adapted to its purpose, that we have thought it worth a brief description.

First, then, in the upper part of the barn is an apartment 12 feet square, boarded so as to prevent the escape of what is put within it. Here the fowls are to roost, lay their eggs, and perform all their in-door work. At the distance of a rod and a half from the barn, on the borders of the garden, is another apartment, of about the same dimensions as the first, surrounded by a high fence, made of lath stuff, sawed two inches wide and nine feet long, and put on close enough to prevent the hens from getting out. These two apartments are connected by a *covered way*, which passes from the scaffold of the barn, in what some would call a *slantindicular* direction, to the fence, about three feet from the top, and is continued down to the ground in the inside of the yard. This is made tight top and bottom, and on one side, but with open work on the other side. Through this covered way, the inmates of the establishment pass when they choose, taking the air and enjoying the prospect, and when they come into the out-door apartment, they indulge, *ad libitum*, in their favorite amusement of scratching dirt and devouring gravel.

The result of the whole is, they are kept under perfect control, and yet enjoy all that liberty which is essential to their health and comfort, and when you want a fresh egg, you have only to lift a lid over a row of little apartments, in which their nests are made, and you will find at almost any time of the day, a plentiful supply. The little chickens, too, as soon as they are large enough to make excursions abroad, will be ready to perform an excellent service in the garden, by devouring the grubs and insects. Thus the inhabitants of our villages and of our *cities* even, who have "scope and verge enough" to possess a barn and a garden, can keep as much poultry as they choose, without infringing in the least upon the laws of good neighborhood. Those who may wish to inspect the establishment we have described, may be gratified by calling on the Rev. D. Thurston of Winthrop.

The plan, doubtless, is a good one. By such an enclosure, the fowls are kept from doing damage in cultivated grounds, are prevented from roving to their own hazard and injury, and will, if properly fed, lay their eggs and rear their young better, than if they enjoyed a more enlarged liberty. Care should be taken, however, when they are confined, to supply them liberally with water, gravel, lime and animal food---such as fresh meat, worms, &c. In this way, people in large villages and cities can keep hens as well as if they lived on farms in the country. Indeed, it would be better for farmers if they would at certain seasons of the year keep their poultry in such an establishment.

We do not know as we understand the necessity or the benefits of *separating* the yard from the barn, by the distance of a rod and a half unoccupied ground, connected by the "covered way," or tube leading from the barn to the yard. Our establishment differs from the foregoing chiefly in this particular. The yard is directly

attached to the back side of the barn, from the wall of which a roof projects, under which are poles for roosts. This is a shelter from the rains and winds. On a level with the floor of the barn, two holes are cut, several feet distant from each other, sufficiently large to enable a hen to enter one and skulk out of the other into the yard again if she wishes. The hens like secrecy in these important matters. Within the barn is a long chest, covered by a lid, having a communication with the yard by the holes aforesaid. The chest is partitioned off into nests, where each hen is allowed to lay her eggs "alone in her glory," little suspecting, perhaps, that the top of her excellent place of concealment is liable to be opened, and her eggs taken away by human stratagem.

USE OF LIME ON FARMS.

A Pennsylvania paper states that a Mr. Cadwell, of Valley township, near Danville, raised 400 bushels of wheat from a field of land, the past season. Five years ago, the product of the same field was but thirty bushels. In the meantime, Mr. C. has spread fifteen hundred bushels of lime on the said twelve acres of land. This fact, it is observed, discloses another of the decided advantages of the *iron* region. It may be added that the example is worth considering in other quarters. Lime is not every where to be had with the same ease, but, on the other hand, it is not every where wanted. What *is* wanted, is science enough, on the farmer's part, to know when and where he has occasion for it, and to what extent. The Geological Reports are throwing great light on these matters, and they are disclosing, at the same time, numerous new locations of valuable lime.

Speaking of science, it has been lately stated of a distinguished agriculturist, that several years ago, at his own expense, he had a portion of soil in his neighborhood examined, with the view of testing what component part it wanted, which rendered it so unpropitious to the cultivation of the *fine cotton*. The absent ingredient was discovered and further examination found it in an adjacent and more favored spot. Since that period, from this discovery alone, lands in that vicinity have been enhanced in value at least *fifty per cent.*

CORN-COB FEED.

The best way to dispose of cobs, is, of course, to grind them with the corn. But we observe two substitutes which have been successfully made use of. One is to soak the cobs in a half hogshead of brine, when the cattle eagerly thrust in their noses and devour them. The other, or better way, is to boil them. One farmer says he would as soon throw away his fodder as his cobs.

NEW INVENTION.

AMONG the new inventions and contrivances of which I have lately heard, is something which I believe bids fair to become universally useful to the city and country, and the world, and that is, a new method of making *good, light, sweet bread.* All the world knows, that one of the most difficult and perplexing matters to house-keepers, is to have good *emptings*, or *yeast*, for bread. Now the invention is this:—Take an acid like cream of tartar, (I mean simply an acid in the form of a powder,) and rub a sufficient quantity of this dry and powdered acid into a proper quantity of dry flour. Then wet the flour and put in your alkali—potash, or any fixed alkali. The valuable part of the discovery is this—the acid and alkali will not effervesce until the loaf is baked, when the acid is *rubbed into the flour in a dry state.* The experiment is worth trying. I assure you, that a most delicious bread is produced, light, sweet and good, in this manner, from any good flour or meal you use, wheat, rye, or Indian. Cream of tartar may be used and saleratus, for the purpose of trying it. Nothing can be more healthful than this bread. The inventor is a baker by trade, and I believe it will come into use every where. Try it yourself, by rubbing into your flour, in a perfectly dry state, some cream of tartar, and then mixing up the batter with whatever liquid you please, milk, buttermilk, or water, and adding a little saleratus. You will have an excellent and toothsome and wholesome bread.

[*Boston Correspondence of Hill's Patriot.*

CHEAP ROOFS.

THE simple mode of roofing out houses by nailing thin boards on light rafters, may be introduced to very great advantage, particularly in the country. It is only to subject the boards before using to the action of fire, by way of thoroughly seasoning them; nail them on immediately, and cover them with sheathing-paper and a dressing of tar; and a covering, almost for a life-time, may safely be calculated upon.

The rafters, 3 inches deep, 1½ thick; the boards half an inch thick, straightened on the edges and closely nailed. The following composition for covering such a roof was employed at Wickham twenty years ago, and is at the present time as good as when first laid. The roof is nearly flat, having a run of one inch only to the foot, the boards being securely nailed and covered with a course of sheathing-paper, such as is used under the copper-sheathing of ships, made fast by small flat-headed nails. To 8 gallons of common tar, add 2 gallons of Roman cement, 5 lbs. of resin, and 3 lbs of tallow; boil and well stir the ingredients so as thoroughly to incorporate them, and lay on to the roof while hot, with a brush,

spreading it very evenly; then sprinkle it while hot with sharp, sifted sand, and when cold, tar and sand as before, after which a single coat of tar once in five or six years will preserve the roof for an age.

To the above may be added, an incombustible, impenetrable wash, prepared according to the following directions. Slake stone-lime with hot water in a tub, covering it to keep in the steam; pass six quarts of it through a sieve, it being in the state of fine dry powder, and add to it one quart of fine salt and two gallons of water, boiling and skimming it. To every five gallons of this boiled mixture, add one pound of alum, half a pound of copperas, and by slow degrees half a pound of potash and four quarts of fine sharp sand. The mixture will now admit of any coloring matter that might be preferred, and is to be applied with a brush. It looks better than paint, and is as durable as stone; it will stop leaks in a roof, prevent the moss from growing and injuring the wood, rendering it incombustible; and when laid upon brick work, causing it to become impenetrable to rain or moisture. [*Farmer's Cabinet.*

USEFUL RECIPE.

I send you below, Messrs. Editors, a recipe for making a composition which will render wood entirely incombustible. It is very simply prepared, and quite easy of application, being used the same as paint, with an ordinary brush. A good coat of it applied to the floor underneath stoves would be an excellent precaution.

Take a quantity of water, proportioned to the surface of wood you may wish to cover, and add to it as much potash as can be dissolved therein. When the water will dissolve no more potash, stir into the solution, 1st, a quantity of flour paste of the consistency of common painters' size; 2nd, a sufficient quantity of pure clay to render it of the consistency of cream.

When the clay is well mixed apply the preparation as before directed to the wood; it will secure it from the action of both fire and rain. In a most violent fire, wood thus saturated may be carbonated, but will never blaze.

If desirable, a most agreeable color can be given to the preparation by adding a small quantity of red or yellow ochre.

It might also be useful for you to mention in your paper, especially at this season of high winds, that a handful or two of sulphur thrown on the fire when a chimney is burning out, will almost instantaneously extinguish the flames. [*Buffalo Com. Advertiser.*

WHITE WASH.

In an exchange, we find a receipt for making the white wash used on the east end of the President's house at Washington, and which is said to be superior to any other.—

Recipe.—Take clean lumps of well burnt lime, (say five or six quarts,) slack the same with hot water in a tub, (covered to keep in the steam,) pass it in the fluid form through a fine seive; add one fourth of a pound of whiting or burnt alum, pulverized; one pound of good sugar; three pints of rice flour, made into a thin and well boiled paste, and one pound of clean glue, dissolved by first soaking it well, and then putting it into a small kettle, which again should be put into a larger one filled with water, and placed over a slow fire. And five gallons of hot water to the whole mixture.

This wash is applied, where particular neatness is required, with a painter's brush. It must be put on while warm, if upon the outside of the building—if within doors, cold. It will retain its brilliancy for many years. There is nothing of the kind will compare with it. About one pint of the mixture will cover a square yard upon the outside of a house, if properly applied. If a larger quantity than five gallons is wanted, the same proportions must be observed in preparing. Coloring matter may be added, to give it any required shade.

GARDENER'S CALENDAR FOR JANUARY.

VEGETABLE GARDEN.

Sow peas, spinach, lettuce, cabbages, radishes, parsley, beets, carrots, salsafy, parsnips, turnips, asparagus. Plant horse radish, Irish potatoes. Transplant cabbages and lettuces.

Remarks.—The best variety of peas for this month, are the early frame and Bishops, for an early crop, and dwarf marrowfat and dwarf green imperial for a succession. Only a few of beets, carrots, parsnips, salsafy, and turnips should be sown this month, as they are all very tender whilst young, and consequently easily killed. Should there be any severe weather, they should be protected by some light covering. The lettuces, cabbages and radishes should also be protected, the last may be sown between rows of carrots or among spinach. Celery should be earthed up during dry weather as often as required, which will be at least once a fortnight. Endive should be tied up for bleaching. It is late to dress artichokes and asparagus beds, but if not done before, they had better be now attended to. The Irish potatoes planted in the commencement of this month, may have their tops killed by frosts in February, but they will not be injured by it; towards the last of the month they may be planted for a general crop.—*Miller's Planters' and Merchants' Almanac for* 1842.

Agricultural and Horticultural
REPOSITORY.

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FRESH AND GENUINE

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THE SUBSCRIBER *has received his Full supply of GARDEN and FIELD SEEDS, consisting of all the varieties enumerated below, and several others which are new. Among them the highly prized WHITE BELGIAN CARROT, which unites the flavor of the Carrot and Parsnip, (for an account [illegible] which see current vol. So. Agr., p. 411.) Also, WINTER RYE, said to [illegible]qual for pasturage to the Carolina Rye; and SEED BARLEY.*

[illegible]enty-five varieties of PEAS, among which are Cedo Nulli, Extra Early Dwarf, Early Warwick, Knight's Marrowfat, Blue Scymetar, Dwarf Sugar of Holland, Spanish Marrow; and all of the old varieties.

BEANS—nineteen varieties, among which are Dutch Dwarf, Davenport, China, Royal Dwarf, Horticultural, &c. &c.

BEETS—eight varieties, consisting of Early Turnip (red and yellow,) Long Blood, Yellow Castelnanderry, Red do., Silesia or Sugar, &c. &c.

CABBAGES—twenty-nine varieties, among which are Early Paris Superfine, Nonpareil, Hope, Vanack, Early York, Ox-heart (large and small,) Battersea, St. Dennis, Early Dutch, Large do., Large Pancallier Savoy of Tours, Monstrous French Savoy, &c. &c.

BROCOLI—three varieties.

CAULIFLOWERS—six varieties, viz.: Tender or Spring, Half-hardy for autumn, Hardy of Paris, Dutch Hardy, Early and Late.

CARROTS—nine varieties. PARSNIPS—two varieties. CELERY—seven varieties. CRESS—three varieties. LETTUCE—nine varieties. CUCUMBER—four varieties. SQUASHES—seven varieties. MELONS *Musk*—nineteen superior varieties *from France*, embracing the Honfleur, Canteleups, Sugar, Persian, Winter, and many others in high estimation. Also, six varieties of American. WATER-MELONS—three varieties. KOHL RABBI—four varieties.

Together with many new and superior varieties of VEGETABLES not enumerated above, for which we refer to our printed catalogue.

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FLOWER SEEDS, DAHLIA ROOTS, (some splendid varieties,) BULBOUS ROOTS, ROSES, GERANIUMS, GREEN-HOUSE PLANTS, FRUIT TREES,

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His STOCK OF IMPLEMENTS has been considerably increased, and embraces a larger variety than has ever been offered in this market. His PLOUGHS are from the most celebrated makers of New-England, and have taken numerous premiums; in addition to which, he has all of the MORE COMMON KINDS, and can accommodate his customers with Ploughs from $3 to $12, according to size and quality. He has also a LARGE ASSORTMENT OF STRAW-CUTTERS and CORN-SHELLERS, with EVERY OTHER IMPLEMENT REQUIRED on the FARM or PLANTATION.

Printed Catalogues will be furnished gratis on application *(post paid,)* and all Orders promptly executed. SEEDS and IMPLEMENTS carefully packed and sent by Steam-boat or Rail-road, to any part of this State, North-Carolina or Georgia.

November 4th, 184[illegible]

J. D. LEGARE.

NOTICE.

The Subscriber finding it inconvenient to attend to any other than the Editorial duties, requests that all letters on business be directed to the Publisher of this Journal, Mr. A. E. Miller, who will also attend to all the business transactions relating to the Southern Cabinet or Southern Agriculturist.

Dec. 3*d*, 1841. J. D. LEGARE.

TO CORRESPONDENTS AND SUBSCRIBERS.

Persons disposed to aid the continuance of the publication of this Journal, will be so kind as to pay their subscriptions to the publisher.

A. E. MILLER.

☞ The following payments have been received for 1842:—Mr. John Milne, Maj. Wm. Murray, H. L. Bryan, David Gaillard, Maj. Chas. Warley, Dr. R. L. North, Peter Gaillard, Thos. W[illegible]

The Amount due for the Southern Agriculturist for 18[illegible] exceeds $1350—principally by our distant Subscribers—to whom we make an appeal, as to the value of our Journal for the year past, and request to know, if they have not received what is an equivalent for $5, and if they are not willing to pay it—why they should not immediately remit us by mail $10—to pay for the past year, and also for the year to come—as it is but fair, if we credit $5 for one year, they should credit $5 for the coming year, especially as our terms are *payment in advance.*

Those who will obtain another Subscriber, *and pay for both in advance*, shall receive a third Copy *gratis*. This might enable a defaulter for the past year to get his subscription paid by another person, which is as liberal as we can afford to be.

Subscribers in arrears for more than $10, will be stricken from our list after the 1st of January, 1842. A. E. MILLER.

BERKSHIRE PIGS.

THE SUBSCRIBER will continues to improve his superior breed of BERKSHIRE SWINE, by crossing with the best imported stock in the country. He has now on hand several very fine litters, and can supply those who wish to purchase, at $20 cash per pair, two months old, delivered on board of any vessel in New York, free of charge. Many of his stock have been sent to several distinguished agriculturists in South Carolina, and have given universal satisfaction.

WM. B, PARSONS.

Flushing, (Long Island,) Dec. 18, 1841. 3

BOOK-BINDING.

BINDING OF THE AGRICULTURIST AND OTHER BOOKS will be done neatly, and cheap, if sent to the office of the Publisher. Missing numbers furnished.

WILLIAM ESTILL, Binder.